A NATIONAL STUDY OF RESOURCE-BASED RELATIVE VALUE SCALES FOR PHYSICIAN SERVICES: MFS REFINEMENT

FINAL REPORT TO THE HEALTH CARE FINANCING ADMINISTRATION

by

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Chapter 1

Executive Summary

1.1 Introduction

Physicians, organized medicine, and patients have long argued that the charge-based system of paying for physicians' services is too complex, inflationary, and inequitable. Responding to growing public discontent, Congress, in 1989, passed legislation that enacted a sweeping reform of the way Medicare pays for physician services. The reform included a fee schedule based on resource costs, limits on physicians' balance billing, Medicare volume performance standards, and the development of practice guidelines. The law directed the Health Care Financing Administration (HCFA), to begin implementation of the new payment system in January, 1992.

The cornerstone of the payment reform is a Medicare Fee Schedule (MFS) based on the resource-based relative value scale (RBRVS), developed by Harvard University researchers with funding from HCFA. The RBRVS research has taken place over a seven-year period and encompassed four phases of investigation. The methods, data, and results of the first phase of the study were published in September, 1988; results of the second phase were published in October 1990. In 1990, HCFA funded a third phase of the RBRVS study that expanded the study's coverage of specialties and services, refined the methods and data, and provided technical support in the development of a new coding structure for evaluation and management (E/M) services.

1.2 Scope of Work for Medicare Fee Schedule Refinement

At the end of phase III of the RBRVS study, there were several areas in which the MFS needed refinement. While HCFA had developed a process, using medical directors of major insurance carriers (CMDs) to review, revise, and update many of the work values, there remained questions that required additional research.

The current study was divided into four distinct tasks with specific objectives for each. In Task I, we examined the work of services provided by two limited license professions (LLPs), optometry and podiatry, and one non-physician profession (NPP), clinical psychology. There were two major parts to this task; first, we developed profession-specific vignettes to serve as examples in CPT for the evaluation and management (E/M) services they provide. Second, for clinical psychology, we established work values for psychological testing and assessment codes.

As part of the ongoing process of maintaining the fee schedule, HCFA chose a set of procedures and visits as a "reference set." These are benchmarks to be used by specialties when introducing new codes or when requesting changes in the work values of existing ones. In Task II, we developed and validated a detailed data set on service time for the reference set.

When the Medicare Fee Schedule was published at the end of 1991, there were approximately 220 procedures that were still listed as being paid "by report," i.e., based upon the information provided by the surgeon performing the procedure. In

Task III, we assigned values or validated previously estimated work values for 179 of these by report codes.

For Task IV, we were asked to collect data and make recommendations about valuing the work of multiple and/or bilateral procedures. Under the MFS, there is a general payment rule for these procedures: 100 percent for the highest priced (primary) procedure, 50 percent for the second, and 25 percent for all subsequent services. For this task we were asked to determine whether the existing rule was a reasonable reflection of the work of additional procedures and to recommend changes if necessary. We measured the economies of scope involved in performing multiple procedures and analyzed the results to determine any systematic patterns across services. Based on our findings, we made payment policy recommendations for these procedures.

1.3 Summary of Methods and Data

The development of the RBRVS was a complex undertaking which required a multi-step process. Detailed descriptions of the methodology have been published elsewhere and described in the final reports for phases I, II, and III and in this report.[1,2,3,4,5,6,7,8,9,10,11,12,13,14]

1.3.1 Methods

In phase I, we identified three main resource inputs required to produce physician services: (1) the total work of

the physician (TW), (2) practice costs, including professional liability insurance premiums (PC), and (3) the amortized value of the opportunity costs of postgraduate specialty training (AST). These three factors are combined to produce the resource-based relative value of a given medical service:*

$$RBRV = TW + PC + AST$$

With the assistance of more than 200 practicing physicians who served on our Technical Consulting Groups (TCGs), we first derived a definition of physicians' total work as encompassing both time and intensity. We found, further, that intensity has several dimensions: mental effort and clinical judgment, technical skill and physical effort, and stress due to risk. We used magnitude estimation to measure work inputs for a given service.

We divided total work into three time periods: pre-, intra-, and post-service. The intra-service period is when the physician sees the patient or performs a procedure; the pre- and post-services are those activities performed for the patient before and after the intra-service period. We measured the work performed in the three periods separately and summed them to

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*The Medicare Physician Payment reform provisions of the Omnibus Budget Reconciliation Act (OBRA) of 1989 incorporate physician work and practice-cost components, including professional liability-insurance premiums, but not the opportunity cost of training in calculation of payment.

produce total work. Finally, since each specialty rated work on a different scale, we had to align the various scales.

In addition to physicians' work, the RBRVS includes practice costs and the opportunity costs of specialized training. In phase I, we developed a preliminary method of allocating these expenses to individual services.[15] Pursuant to legislation, HCFA has modified our approach to measuring practice costs for the MFS.[16] Also, as specified by statute, the opportunity costs of training have been excluded from MFS payments.

We used definitions of services drawn from CPT-4, which identifies more than 7,000 distinct services and procedures. In phases I, II and III, we studied approximately 5,000 services in 33 specialties or subspecialties. In phases I and II, we randomly sampled 100 or more physicians in each specialty to obtain the basic data for the RBRVS. In phase III, we used a small group process and expert panels of physicians to obtain ratings of work for most of the physician services that remained.

The technical aspects of the current study reflected those employed in the earlier phases of the RBRVS. We used surveys of physicians to obtain measurements of service work and time. For our study of clinical psychology, podiatry, and optometry, we continued to use magnitude estimation and a single reference service to rate intra-service work, as in phases I and II. We did this because these professions had not been studied previously and an established scale was not yet available. For

the remaining specialties, we modified this approach by providing multiple reference services.

1.3.2 Data

We surveyed practicing physicians and other professionals about the time and work for services they perform. These data were collected in two ways: surveying a nationwide random sample of practitioners (clinical psychologists) and surveying a small group of experts (all other specialties or professions included in this study, except clinical psychology). All data for these tasks were collected by mail.

With the exception of our study of clinical psychology, data collection followed the model developed in phase III where we relied on RBRVS Assessment Panels comprised of 15 to 20 experts in each specialty. After experimenting with various approaches to using small groups of physicians to measure work, this approach was the method that best approximated the results of the large national surveys.[8,17]

1.4 Major Findings of Phase IV

1.4.1 Task I: Work of Non-Physician and Limited License Professions

Working with our TCGs, we created vignettes for E/M services provided by optometry and podiatry and measured the work and time required to perform these services. For clinical psychology, we also studied the work of psychological assessments.

We found that it was possible to compare the work of podiatry and clinical psychology with that of the medical specialties providing the same or similar services. We used this result to assign vignettes to E/M codes for podiatry and to place the work of the assessment services performed by clinical psychologists onto the common scale. For optometry, we found that for all the services we examined, the optometrists take less time than ophthalmologists to perform them. As a result, we used different methods to assign optometry vignettes to E/M codes.

We studied the work of 16 assessment services in clinical psychology. For the primary assessment service (CPT code 90830), we found no significant differences in work per hour among four subcategories within this code. We concluded this code should not be subdivided, as hypothesized by our TCG.

We found the work per hour for assessments was 40 percent less on average than that for psychotherapy. The TCG argued that the work per hour of assessments was at least as great as or up to 140 percent of that for psychotherapy. Based on our analysis and qualitative review of the data, we agreed with the members of TCG that the work per hour of assessments we obtained was too low. We used reasonable assumptions to recommend appropriate values for these services.

1.4.2 Task II: A Data Set for Validating the Reference Services

In Task II, we developed a comprehensive list of reference services, collected data with detailed time information, and

validated the time estimates using both subjective reviews and comparisons with other data. Finally, we prepared a fact sheet that summarized the relevant information for each reference service.

We developed a list of 15 to 35 reference services for each important specialty and constructed a data file with detailed time information on each service. These data included mean estimates of time, the standard error, the source of the information, and the number of respondents. We validated our findings using objective data and subjective estimates from other studies. In general, these comparisons suggest our time estimates were reproducible and valid. Further, the physicians who reviewed our results agreed with the values we had obtained.

1.4.3 Task III: Developing Work Values for "By Report" Procedures

We produced work values for 179 by report services. For the 145 services studied previously in phase III, we developed a review process and asked the assessment panelists to evaluate the existing work estimates. Overall, the panelists showed a high degree of agreement with the phase III values. We revised the total work of eight services based on their recommendations. For the 34 newly studied by report services, we asked the panelists to rate the work of each service and placed them on the scale common to all specialties.

1.4.4 Task IV: The Work of Multiple and Bilateral Procedures

We selected a total of 146 multiple procedures for study, including 122 multiples involving two services and 24 involving three or more procedures. Using methods developed in phase III and the RBRVS Assessment Panels for ten specialties, we estimated the work and time involved for each of these services.

We found economies of scope in performing multiple procedures. For two service multiples, the marginal intra-service work and time of the second procedure is about 75 percent of that required to perform that procedure alone. For pre- and post-service work, this amount was 20 percent, suggesting significantly greater economies. We found economies of scope for total work to be, on average, 48 percent.

We found some differences in economies of scope across multiple procedures. For bilateral procedures, the total work of the added service was, on average, 40 percent of the total work of the service performed individually. For other multiples, this amount was closer to 50 percent. We also found greater economies in total work for those services where pre- and post- comprised a larger portion of the total. Finally, we found some differences across clinical service groupings.

Economies of scope also exist for multiple procedures involving three or more services. We found the added total-service work for the third procedure was about 45 percent of that when the third procedure is performed alone. This amount is

greater than the 25 percent value assumed for the current MFS policy.

Based on these findings, we suggested two payment policy options be considered for the second service in a multiple procedure. The first option is to continue the current rule of 100 percent of full payment for the primary procedure and 50 percent payment for the second procedure. The second option would decrease the payment factor to 40 percent for the second service for bilateral procedures. Finally, we recommend that the current MFS policy for the third and subsequent procedures in a multiple be reconsidered.

1.5 Remaining Research

The RBRVS-based MFS is now in it's second year and continues to undergo refinements. As with any new program, there are areas in which additional research is required to assure that the RBRVS remains a solid foundation for paying physician services.

The most pressing area requiring research continues to be the practice cost component of the MFS. Due to a flaw in the enabling legislation, historic physician charges are used to compute and allocate practice costs; thus this component of the fee schedule is not resource-based. As a consequence, the amounts allowed for practice costs bear little relation to the actual. For invasive services, the allowed practice cost is higher than the actual, while the opposite is true for E/M

services. This distortion in the allocation of practice costs needs to be corrected.

Second, a systematic and open process for reviewing, refining, and updating the RBRVS is required. The current process operated by HCFA for this purpose has many useful features. These include the use of multi-specialty panels, a reference set for rating work, formal rules for decision-making, and an open and well documented process. However, the vast majority of revisions made to the RBRVS (more than 90 percent) have resulted in increased work values. As payment under an RBRVS evolves and expands to other payors, there will be a need for methods of review and modification that are conceptually sound, validated, and resistant to bias and "gaming."

Third, there is no simple solution to determine the rate at which limited license practitioners (LLPs) and non-physician practitioners (NPPs) should be compensated. For podiatrists and clinical psychologists, we found comparable time and relative work values for these professions and physicians for the same services. We also found that for all of the services we compared, optometrists take less time than ophthalmologists. Our results provide additional information to assess the question of how to pay LLPs and NPPs. However, questions still remain. In particular: 1) how does Medicare wish to compensate providers with different levels of training; 2) although the time and work for comparable services may be the same, is the clinical outcome

or patient satisfaction comparable; and 3) what is the impact of payment policies on the cost and volume of services?

Fourth, CPT-4 was designed for clinical coding of physicians' services, not for payment purposes. However, following the practice established under the previous CPR system, the MFS bases physician payment on CPT-4. While some progress has been made to correct some of the shortcomings of CPT-4, many ambiguities and inconsistencies remain. There are large differences in the degree of specificity and in the number of codes by specialty. Since relative values are developed based on the CPT-4 coding structure, the shortcomings of the coding system can bias payments. Payment reform requires a clear conceptual basis and a set of agreed-upon principles for classifying, defining, and coding physician services for payment purposes.

Finally, the RBRVS only measures the resource cost required to perform physician services. The quality of services, which varies among physicians, has not been considered as part of the RBRVS. Physicians who provide a higher quality of service that requires additional resources are penalized by the current fee schedule. This limitation of the RBRVS needs further study.

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Chapter 2

Overview and General Methods

2.1 Introduction

At the end of phase III of the RBRVS study, there remained a number of areas in which the Medicare Fee Schedule (MFS) required refinement and improvement. Specifically, HCFA requested that Harvard undertake four major tasks: first, the creation and validation of profession-specific examples describing evaluation and management (E/M) services for three limited license professions; second, development and validation of a detailed data set on time for reference services by which to anchor the MFS; third, development of relative values for services in the MFS that were paid "by report;" and fourth, measurement of the work of multiple and bilateral surgical procedures. Each task required development of methods of measurement, and collection and analysis of data. In the remainder of this chapter, we review the development of the RBRVS and describe the work undertaken under this contract.

2.2 Background of Physician Payment Reform

Between 1980 and 1990, Medicare expenditures for physicians' services grew from $7 billion to $27 billion, an average increase of 14.5 percent annually. While the rate of growth has slowed in recent years, the volume of services from Medicare rose over 7 percent per year in the late 1980's.[1] Projections by the Department of Health and Human Services (DHHS) estimate that, even without program expansion or national health insurance, Medicare spending for physician services will likely triple over the next 10 years.[2]

At the same time this rapid growth occurred, there was an increasing awareness that the physician payment rules used previously by Medicare had inequitable rates between procedural services (eg, surgery and invasive tests) and E/M services (eg office visits). An inequitable fee structure could influence clinical decisions by giving an incentive to over-perform certain services and under-perform others. Medical school graduates might also be unduly influenced in their choice of which specialty to enter.

At the center of the problem was the method Medicare used for paying physicians -- "customary, prevailing, and reasonable (CPR)." Dissatisfaction with this system and rapid growth in physician payments led to efforts to develop alternative methods of payment. The effort that became the basis of the MFS was the resource-based relative values scale (RBRVS), the research for which was funded by HCFA beginning in 1986. After completion of the first phase of the research in 1988, the RBRVS was accepted as the basis of the MFS and served as a cornerstone in the physician payment reform that was implemented by HCFA as of January, 1992.

2.2.1 History of the Resource-Based Relative Value Scale

For the most part, nearly all the relative value scales developed prior to the MFS were based on physicians' charges. These charge-based relative value scales, without modification, simply institutionalized whatever price distortions already

existed in the imperfect marketplace. If a system were to be more equitable and rational, it would need to rest on a method that gave it independence from existing charges.

A new method to establish relative values based on a measure other than charges was developed by Hsiao and Stason.[3] This approach based the relative values of medical and surgical services on the resource costs of production. The model used tried to approximate the relative prices that would obtain in a competitive market. Thus an RBRVS would, if adequately constructed, be neutral with regard to financial incentives in choosing one form of treatment over another; in other words, the payment system would aim to create a "level playing field."

2.2.2 The National RBRVS Study: Phases I and II

In the national study that began in 1986, Harvard investigators extended the earlier research and explored the factors that physicians identified as constituting work inputs and other resource costs. They developed methods to measure these components as described in detail elsewhere.[4] To measure physicians' resource costs, we defined physician inputs as: (1) the **work** expended by the physician on particular services comprising the time spent before, during and after the service, and the intensity with which that time is spent; (2) the **practice costs** necessary to provide the service; and (3) the **opportunity cost** of training, which represents the income foregone when

physicians pursue additional training to qualify as a specialist. These three factors were combined in a multiplicative model.

In the first phase of the RBRVS study, we estimated the total work of more than 400 services by surveying a national sample of approximately 3000 physicians in 18 specialties.[4] Using the technique of magnitude estimation,[5] we gathered information on the work required during the performance of selected services in each specialty. The work before and after a given service (pre- and post-service work) was also calculated from the survey data. Since each specialty rated work on a different scale, it was necessary to link the scales of different specialties. To do this, we asked physicians in 18 specialties to identify pairs of surveyed services that had the same or equivalent amounts of work. We used these pairs to align specialty-specific ratings of work onto a common scale. Lastly, we used charge-based extrapolation to expand the number of services for which we produced estimates of work.

Our phase I and II investigation led to several major findings. We found that physicians' work can be defined systematically and rationally and measured using magnitude estimation. The measurements of work were found to be reliable and valid. We also found that a common scale could be developed to produce inter-specialty relative values via cross-specialty alignment.

The major substantive finding from the first phase of the RBRVS study was that physician charges were not closely related

to resource costs. E/M services were compensated, relatively, at a lower rate than invasive, imaging and laboratory services. E/M services were paid at a rate two to three times lower than invasive services whether they were performed by surgeons, internists, or family practitioners.

Following the completion of the first phase of the RBRVS study, the Medicare Catastrophic Act of 1988 (P.L. 100-300) mandated the expansion of the RBRVS study to 15 new specialties. In the fall of 1988, HCFA funded a second phase of the RBRVS study to include additional specialties that had not been studied in phase I. Besides these 15 additional specialties, we restudied seven that had not been sufficiently investigated in the first phase.

The second phase of the RBRVS study was also intended to address several problems identified in the first study.[6] These included the measurement of pre- and post-service work, the method of aligning specialties on the common scale, and validation of the results.

2.2.2.1 Results of Phase I and II

In phase I and II of the study, we developed 785 vignettes covering 33 specialties. These vignettes made 460 unique service codes. For E/M, we surveyed directly codes comprising over 90 percent of Medicare dollars for these services. We also surveyed more than 200 surgical procedures, which comprised 56 percent of Medicare-paid surgical claim dollars.

We aligned, on a common scale, relative values for the services of the 33 specialties surveyed in phases I and II of the study, relying on physicians in face-to-face meetings to select pairs of services in their specialties that were approximately the same in work. In five cross-specialty panel meetings, TCG panelists selected 193 pairs of services they considered to be the same or equivalent, bringing the total number of links to 275.

In phase II, we obtained a larger number of direct estimates of pre- and post-service work. We were able to obtain the pre- and post-service work for more than 80 percent of the invasive services included in the study. We made several improvements in our method for estimating pre- and post-service work for services in both the invasive and E/M categories.

Also in phase II, in response to criticisms that some physicians might not be qualified to give estimates of work because they had little knowledge or experience about a service, we asked physicians whether they performed a particular service and how frequently in the preceding year. Analysis of these data showed that there was no systematic relationship between frequency of performance and ratings of work.[7]

Finally, we experimented with several small group processes to test whether a small panel of physicians would replicate the results we obtained from the national survey. Through these experiments we found that a structured small group process with 10 to 15 physicians in a given specialty can produce estimates of

work that are very close to those from national surveys. This method was used in phase III to fill in the relative values for those services that had not been surveyed.

2.2.3 The National RBRVS Study: Phase III

In phase III, we undertook several major new tasks.[8] With the passage of the new physician payment system for Medicare, it became imperative that a relative value be produced for every CPT code. The charge-based extrapolation method developed in phases I and II had often produced anomalous results. Our first task in phase III was to estimate work values for all codes that represent services provided by physicians. In order to add approximately 4500 values, we used the method described above, of surveying a small group of expert physicians, by mail. Most of the codes to be estimated described surgical services. Some specialties required several rounds of surveys because of the large numbers of codes in the specialty (e.g. orthopedic surgery).

Our second task was to assist HCFA in developing a fee schedule for E/M codes. We had found that the CPT codes for these services were not being used in a uniform or consistent way by physicians or across specialties. However, the introduction of the MFS required that all physicians code the same service with the same CPT code for payment purposes. If physicians had continued to use the CPT codes for E/M services as they had in

the past, there would have been serious payment inequities between specialties.

A major task was to assist in redrafting the codes for E/M services to make their definitions more uniform. To do this, we analyzed the relationship between work, time, site of service, and type of patient to define levels of service; we assigned vignettes to each family of codes; and we provided HCFA with information to cross-walk between the old and new CPT codes for E/M services.

We also refined the estimates of pre- and post-service work in phase III. Among the changes were refinement of the definitions of pre-, intra-, and post-service work to include such components as positioning the patient prior to incision and post-operative ICU care. Data were collected on the pre- and post-service times and visits for over 1500 surgical services.

We also spent time in phase III reviewing and validating as many relative values as possible. We had two objectives: first, to identify work values that were not in the rank order as judged by medical experts, and second, to review those services that accounted for the majority of Medicare payments. We reviewed and validated data in several ways: we used clinical experts to examine the data; we compared national survey and small group work values; and we reevaluated
relative values for more than 100 CPT codes commented upon in response to HCFA's draft Notice of Proposed Rule-Making.

2.3 Refinement and Improvements to the Fee Schedule (Phase IV)

The work to be performed under this contract was divided into four distinct tasks with specific objectives for each. While some of the same specialties were studied in more than one task, the objectives of each task were quite separate.

There are a significant number of codes in CPT that describe services provided exclusively or in large part by limited license practitioners (LLPs) or non-physician professions (NPPs). Other than our earlier investigation of oral and maxillofacial surgery, no attempt was made in the first three phases to measure the work of these services or to test the appropriateness of descriptors of general codes for the services when provided by LLPs or NPPs. For Task I, HCFA requested that we study the work of E/M services provided by two LLPs (optometry and podiatry) and one NPP (clinical psychology). There were two major objectives: first, the professions of optometry and podiatry wanted specialty-specific vignettes to serve as examples for the E/M services they provide. These vignettes were to be validated and aligned on the scale of work common to all specialties. Second, for clinical psychology, we were to compare psychiatry and clinical psychology and, more importantly, to establish work values for testing and assessment codes.

As part of the ongoing development of the new fee schedule, HCFA has identified the importance of establishing a set of procedures and visits as a "reference set." These will serve as benchmarks to be used by specialties when introducing new codes

or when requesting changes in the work values of existing ones. The reference services both anchor the scale and define its range. Thus it is important that the work values for these procedures be as accurate and reliable as possible.

For Task II, HCFA asked us to develop and validate a detailed data set on service time for the reference set. There were three specific objectives for this task: first, we needed to establish an agreed-upon reference set, expanding upon the initial HCFA list; second, we were to provide detailed time data for these services; and third, we were to validate these estimates.

When the Medicare Fee Schedule was published at the end of 1991, there were approximately 220 procedures that were still listed as being paid "by report," i.e. based upon the information provided by the surgeon performing the procedure. According to HCFA these codes fell into two categories:

1. Procedures at the high end of the relative value scale, with low Medicare frequencies, performed on patients with serious and complex medical problems; and,
2. Other procedures characterized by low Medicare frequency, for which HCFA felt there was insufficient information to produce relative values.

To the extent that values could be determined for these services, we were to do so in Task III. Some of these CPT codes had been assigned relative values by us after the publication of the MFS. Others we had studied earlier but HCFA decided not to include

their work values in the fee schedule until they had been subjected to further analysis. In carrying out this task, we collected additional data and validated information from phase III of the RBRVS study.

For Task IV, we were asked to collect data and make recommendations about valuing the work of multiple and/or bilateral procedures. Under the MFS, there is a general rule for payment for these procedures -- 50 percent for the second procedure performed concurrently, 25 percent for each additional procedure. The rule does not discriminate between bilateral and multiple procedures requiring only one incision, those requiring more than one, and those from different clinical groups. For this task we were asked to determine whether the existing rule was a reasonable reflection of the work of additional procedures and to recommend changes as required.

2.4 Methods

In carrying out the work of the four tasks described above, we have relied on the methods developed, tested, and refined over the previous three phases of the RBRVS study. Our methods are based on the theoretical framework of the RBRVS, developed in phases I and II, that defines the work of a service as comprised of the time spent during, before and after the service, and the intensity of that time. We also employed the refinements to these methods made in phase III and the extensive data collected in all phase of our study.

2.4.1 Consultative Process

The collection, analysis, and interpretation of data requires medical and professional expertise. To provide the necessary consultative input, we developed formal consultative panels in phases I and II. These technical consulting groups (TCGs) were supplemented in phase III by a small group of physicians in each specialty known as RBRVS Assessment Panels. In phase IV, we recruited new TCGs for clinical psychology, optometry, and podiatry, and reconstituted the phase I TCG for oral-maxillofacial surgery. With the assistance of the American Psychological Association (APA), American Optometric Society (AOS), American Podiatric Medicine Association (APMA), and the American Association of Oral and Maxillofacial Surgeons (AAOMS), we formed new assessment panels for these professions. The TCG panelists for all specialties included in the study are presented in Table 2.1.

The TCGs performed several essential functions during phase IV; they advised us about specific features of each specialty and participated in the assessment panel process. The assessment panelists were a primary source of data for the current study and many also reviewed the data on time and work for selected services.

2.4.2 Technical Process

We followed the general methods used in the earlier phases of the RBRVS. We continued to use magnitude estimation as the

method for obtaining estimates of work and practicing physicians as the source of data for these estimates.

2.4.2.1 The Small Group Method for Measuring Work

In phase II, we developed and tested small group methods for measuring work. These methods were designed to permit data collection for a large number of services using a panel of experts in the specialty. We found that a single-round mail survey involving a group of 10-15 expert physicians could produce results which are consistent with those obtained from a large national survey.[6,9] In phase III, we used this finding to develop a small group method to estimate work for a large number of services.[8]

In this study, we followed essentially the approach used in phase III. In assessing the work of a service, we used the RBRVS Assessment Panels and mail surveys for each specialty. Unlike the Delphi method, each cycle involved only a single round of ratings; physicians were not allowed to change their ratings in a subsequent survey.

2.4.2.2 Rating of Service Work: Magnitude Estimation

In the initial phase of the RBRVS study, we selected magnitude estimation as the best method to obtain assessments of service work. Magnitude estimation uses a ratio scale to measure subjective perceptions and judgements; its capability to obtain reliable, reproducible and valid results has been demonstrated.[5]

Using this method, we asked physicians to use a particular service as the reference. In general surgery, for example, we defined the reference service as an uncomplicated hernia repair and asked physicians to compare the work of each service in their survey to this reference. Physicians were instructed that if they judged a service to be twice as much work as the reference, they should give it a value twice that assigned to the reference, a service half as much work should be given a value half that of the reference, and so on.

In phases I and II of the RBRVS study, we used magnitude estimation and a single reference service for each specialty to measure the work of all services studied. We found this method produced valid and reliable estimates.

For our investigation of clinical psychology, podiatry, and optometry, we continued to use magnitude estimation and a single reference service. We did this because these professions had not been studied previously and an established scale of work was not yet available.

For the remaining specialties, we modified this approach by providing multiple reference services. In rating a service, we asked the respondents to consider the work values we provided for a list of 25 to 35 reference services. We instructed the physicians to consider these reference work values as fixed and use them as the context for assigning values to the service in question. In this way, the respondents were constrained to use

the existing scale of work in making their new assessments. We used this same approach in phase III.

We chose this method of rating work for two reasons. First, unlike the phase I and II studies, an existing scale of work is available for the current investigation. These values were developed using magnitude estimation through surveys of physicians, have undergone extensive review, and have been shown, in general, to be reproducible and valid. Using the existing scale to obtain additional ratings ensures that the new values will be consistent with the previous ones.

Second, multiple reference points can aid in magnitude estimation by providing an "anchor" for new ratings.[10] The reference list supplies both a range of work values for the new ratings and a context in which to make comparisons. For example, in rating the work of a new service, respondents can identify services of similar work or clinical attributes on the reference list. These multiple reference points provide a more substantial basis for new estimates of work than a single reference service.

We used a separate reference list for each specialty. As reference services, we used those developed for Task II, as described in chapter 4. These services include the most commonly performed services in a specialty, services which span the range of work, and services from each of the important clinical categories.

As work values for the reference list, we used those included by HCFA in the 1993 Medicare Fee Schedule. These values

were based largely on the work estimates from phase III of the RBRVS study. To maintain consistency with our earlier research, we presented these estimates on the reference list using the Harvard RBRVS common scale of work. The relative work relationships between the Harvard and HCFA scales do not differ. Appendix Table B.1 presents the specialty reference lists and work values used in obtaining judgments of work in this study. The reference services for additional specialties are discussed in Chapter 4.

2.4.3 Data

We used the RBRVS Assessment Panels as the source of data for the study of podiatry and optometry in Task I and all specialties involved in the Task II, III, and IV investigations. The RBRVS Assessment Panels assembled, the number of panelists, and the number of survey cycles involved for each specialty are summarized in Table 2.2.

We did not use the small group approach for the study of clinical psychology. Instead, we conducted a mail survey of randomly selected clinical psychologists. We did this because of issues raised by the psychology TCG. These included the fact that the psychological assessments constitute a major part of the work of psychology and they had never been studied. Second, psychological assessment is very specialized and surveying a small group of psychologists would not provide an adequate sample

of psychologists with sufficient knowledge of the testing services we wanted to study.

2.4.4 Computing Group Estimates of Service Work and Time

We followed the essential elements of the statistical methods employed in the earlier phases of the RBRVS study to compute group estimates of service work and time.

2.4.4.1 The Use of Logarithms

Before the numerical judgments of work and time were analyzed, each judgment from each physician was transformed by taking its logarithm to the base 10. As in the earlier phases of the RBRVS study, the logarithmic transformation was chosen because the ratings of work obtained from magnitude estimation exhibit a logarithmic distribution. The logarithmic transformation aided the statistical analysis and permitted the usual statistical assumptions about normally distributed population means and variances.[4] The use of logarithms in analyzing numerical judgments obtained using the method of magnitude estimation is well documented.[5]

2.4.4.2 Policy About Outlier Ratings

As before, aberrant ratings for a service were identified by examining the full set of ratings given by a panel. As in phases I and II, for the ratings obtained from the large national survey of clinical psychology, deviant responses were deleted one by one

until no response differed from the mean of the remaining ratings by more than three standard deviations of the remaining ratings. Deleted ratings were considered outliers and treated as missing. Less than one percent of the ratings were treated as missing data due to these removals of outliers.

As in phase III, deviant responses obtained from the small group panels (used for all specialties and professions except clinical psychology in this study) were not discarded, but given less weight in the computation of the mean rating for a service and its standard error. In this way, the importance of an individual rating in the computation of the group estimate of work for a service lessened as the deviation of that rating from those of other physicians grew larger in magnitude. This approach conserves information in contrast to the cutoff (three standard deviations from the mean) beyond which ratings were dropped in phases I and II.

The scheme of "bi-squared weights," or "bi-weights" described by Mosteller and Tukey was used to weight ratings.[11] The bi-weight for a rating was defined thus:

Let Q be the inter-quartile range of unweighted ratings for a service and let U be defined as:

Equation (1)

$$U_{ij}=\frac{|(r_{ij}-\overline{r_i})|}{6*(Q_i/2)}$$

where r_{ij} is the rating of work or time for service i and

physician j and $\overline{r_i}$ is the weighted mean of all ratings for service i preceding the iteration (unweighted for the first iteration). The bi-weight is:

(2) $W_{ij} = (1 - (U_{ij}^2))^2$ for $U_{ij}^2 < 1$

(3) $W_{ij} = 0$ for $U_{ij}^2 \geq 1$.

The weighting approach required iterative computations. Each step recomputed the w_{ij}'s and $\overline{r_i}$ using the biweights computed from the previous step. We found that three rounds were sufficient to produce convergence and relatively stable biweights. The final round provided an estimate of the mean and standard deviation of a panel's rating for a service. An approximate estimate of the standard error of the mean rating was obtained by simply dividing the estimate of the standard deviation by the square root of the number of physicians from whom there were non-missing ratings of the work or time the service required.

2.4.4.3 Missing Ratings in the National Survey for Clinical Psychology

As we have found in our earlier research, some of the ratings of work and time for services are missing because respondents did not always feel comfortable rating some of the services and because a few outliers had been deleted. To maintain consistency with the methods used in analyzing the data obtained from large national surveys in phases I and II, we again used the estimation-maximization algorithm[12,13] to get summary

statistics for the survey of clinical psychology. Imagine a large array of ratings that had a row for every survey respondent, a column for each service, and no missing ratings. The Estimation-Maximization routine that we used[14] provided an estimate of the mean of each column of the large array and an estimate of the standard deviation of each of those columns. As in phase III, we did not address the issue of missing ratings in the surveys of the small group panels.

2.4.4.4 Geometric Means and Standard Errors for Service Work and Time

To report the group estimates of service work and time on the numerical scale on which the ratings were obtained, we computed the geometric mean of the unlogged ratings. To do this, we took the antilogarithm of the mean ratings described above. It is helpful to remember that when the population of ratings is symmetric, the median and the geometric mean of the population of unlogged ratings are equal to each other. The approximate standard error as a percentage of the geometric mean was computed as:

$$(4) \quad SE = 100 * (10^{a} - 1)$$

where a is the standard error of the mean rating of the log of work described above.

The remainder of this report describes the work of phase IV in detail. We discuss each of the tasks separately in succeeding

chapters. The last chapter summarizes the results of our research.

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Table 2.1

List of technical consultant group (TCG) members by specialty

General Surgery	
Blake Cady, M.D.	Boston, MA
Neurosurgery	
Merwyn Bagan, M.D.	Concord, NH
Paul D. Croissant, M.D.	Pontiac, MI
Philipp M. Lippe, M.D.	San Jose, CA
Robert G. Ojemann, M.D.	Boston, MA
Byron C. Pevehouse, M.D.	Charlottesville, VA
Obstetrics and Gynecology	
William H. Coleman, M.D.	Scottsboro, AL
Richard C. Gallagher, M.D.	Concord, MA
Alan L. Lasnover, M.D.	Cupertino, CA
Stanley Marinoff, M.D.	Washington, DC
Ophthalmology	
Wayne Fung, M.D.	San Francisco, CA
Cono M. Grasso, M.D.	Elmhurst, NY
Stephen A. Kamenetzky, M.D.	St. Louis, MO
Richard L. Lindstrom, M.D.	Minneapolis, MN
Orthopedic Surgery	
Blair C. Filler, M.D.	Los Angeles, CA
Otolaryngology	
Lee Eisenberg, M.D.	Englewood, NJ
John Foust, M.D.	Charlotte, NC
Sam Kinney, M.D.	Cleveland, OH
Charles F. Koopmann, Jr., M.D.	Ann Arbor, MI
Urology	
Alan H. Bennett, M.D.	Albany, NY
Mark Litwin, M.D.	Santa Monica, CA
Robert D. Wickham, M.D.	New York, NY

Table 2.1 (continued)

List of technical consultant group (TCG) members by specialty

Clinical Psychology	
Larry Friedman, Ph.D.	Portland, OR
James Georgoulakis, Ph.D.	San Antonio, TX
Paula Hartman-Stein, Ph.D.	Akron, OH
William Pollack, Ph.D.	Belmont, MA
Jeanette Reuter, Ph.D.	Kent, OH
Jonathan Slavin, Ph.D.	Medford, MA
Herbert Zaretsky, Ph.D.	Old Bethpage, NY
Optometry	
Howard Braverman, O.D.	Hallandale, FL
Linda Casser, O.D.	Indianapolis, IN
David Ferris, O.D.	Warwick, RI
Micheal Larkin, O.D.	Los Alamitos, CA
David Mills, O.D.	West Warwick, RI
Robin Rinearson, O.D.	B. Crossroads, VA
Podiatry	
John George, D.P.M.	Worcester, MA
A. Louis Jimenez, D.P.M.	Snellville, GA
Marc Lenet, D.P.M.	Baltimore, MD
Robert Scardina, D.P.M.	Boston, MA
Kathleen Stone, D.P.M.	Glendale, AZ
Oral and Maxillofacial Surgery	
Lewis N. Estabrooks, DMD	South Portland, ME
Lanny R. Garvar, DMD	Tamarac, FL
John F. Helfrick, DDS	Houston, TX
Steven M. Roser, DMD, MD	New York, NY

Table 2.2

RBRVS Assessment Panels used in the MFS refinement

Specialty	Number of panelists	Survey cycles
Clinical psychology (panels A+B)	274*	1
Clinical psychology (panel C)	123*	1
General surgery	39	2
Neurosurgery	18	2
Obstetrics & gynecology	18	2
Ophthalmology	27	2
Optometry	24	1
Oral & maxillofacial surgery	30	2
Orthopedic surgery	19	2
Otolaryngology	15	2
Podiatry	24	2
Thoracic surgery	25	2
Urology	23	2

*National survey of clinical psychologists.

Chapter 3

Task I: Validation of Specialty-Specific Examples for Evaluation and Management Services Provided by Limited License and Non-Physician Practitioners

3.1 Introduction

In the preceding three phases of the RBRVS study, we analyzed the work of only one limited license profession, namely oral-maxillofacial surgery. There are, however, a significant number of CPT codes that describe services provided exclusively or in large part by limited license (LLPs) or non- physician practitioners (NPPs). Prior to the work performed during this contract, we made no attempt to measure the work as performed by LLPs and NPPs or to test whether the descriptors for the codes are appropriate for the services they provide.

In this task, we studied the work of evaluation and management (E/M) services provided by two LLPS, optometry and podiatry, and one NPP, clinical psychology. Working with each of these professions, we created vignettes for E/M services provided by the professions and measured the work and time required to perform the services described in the vignettes. In consultation with members of the respective Technical Consulting Groups (TCGs), we selected illustrative vignettes for the more common E/M codes. We compared the work of each profession with that of the medical specialties providing the same or similar services and placed them, when possible, on a common scale of work. And finally, we studied the work of profession-specific codes, namely psychological assessments as provided by clinical psychologists.

In this chapter, we review the historical treatment of each of these professions, present a brief overview of each, and describe our methods, data, and results.

3.1.1 Historical Treatment of Limited License and Non-Physician Practitioners

Historical payment practices for providers other than M.D.'s and D.O's are a patchwork of rules. Several professions, namely dentistry, oral-maxillofacial surgery, podiatry, optometry and chiropracty had been designated as LLPs, eligible for Medicare payment for specific procedures. Prior to the MFS, these professions were paid their usual, customary, or reasonable (UCR) fees. Relative values, developed for physicians, are currently used to compensate LLP providers for those services.*

The Physician Payment Review Commission (PPRC) has recommended that LLP's be paid using the same fee schedule as M.D.s and D.O.s.[1] The PPRC argued that prior to January 1992, under the UCR system of payment, no distinction was made between these specialties and physicians for the specific services that they were licensed to perform and recommended that this practice continue. However, charges were based on the fees of LLPs, not on a specific fee schedule. To the extent that UCR charges were below those of physicians, a move to parity under the MFS will produce a financial windfall.

In contrast, Medicare regulations are quite specific about limits on payment to non-physician practitioners.[2] Both physician assistants (PAs) and nurse practitioners (NPs) are to

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*Parity with physicians was not necessarily part of the original Medicare legislation. For example, optometry was not covered under Medicare until 1981 and not given parity until 1986.

be paid at 75 percent of the physician fee schedule for services provided in the hospital and 85 percent in all other settings. Clinical psychologists will be paid the fee schedule amount for diagnostic tests (for which they are the primary providers) while payment rates for therapeutic services, such as psychotherapy, remain to be determined. Clinical social workers will be compensated at 75 percent of the rate established for clinical psychologists. Implicit in this fee schedule are assumptions about the equivalence of services provided both by NPPs and physicians and the resource costs entailed.

3.2 A View of Three Professions

3.2.1 Optometry

The modern profession of optometry emerged at the beginning of this century. Until that time, optometrists were divided into two groups: "dispensing opticians" who fitted glasses and "refracting opticians" who examined patients and prescribed glasses. A Doctor of Optometry (O.D.) is a primary health care provider who diagnoses, manages, and treats conditions and diseases of the eye.

O.D.'s are licensed by the states to examine the eyes for the presence or absence of vision problems, eye diseases, and other abnormalities. In 1901, Minnesota passed the first law to define and regulate the profession. By 1924, all states and the District of Columbia had passed legislation to regulate the practice of optometry.[3] The first state to allow optometrists

to use ophthalmic drugs was Rhode Island in 1971. By 1988, 49 states and the District of Columbia permitted the use of diagnostic drugs; 24 states allowed optometrists to prescribe a limited number of therapeutic drugs for the treatment of eye disease.

For twenty years after the enactment of the initial Medicare legislation, optometry lobbied for parity with ophthalmology for the services both professions provided.[4] Until 1981, optometry was restricted to provision of visual aids for post-cataract patients; effective July 1, 1981, coverage was expanded to include payment for examinations. As might be expected, optometrists welcomed the change while ophthalmologists opposed it and lobbied for its repeal. Ophthalmology has continued to lobby to restrict payment to optometrists to postoperative cataract care. However, in 1986, professional parity was included as part of the Omnibus Budget Reconciliation Act (OBRA-86). Effective April 1, 1987, optometrists were eligible for payment for Medicare services within the scope of state law. The number of services covered did not increase under the legislation but the number of covered providers expanded. The impact on the income of optometrists was considerable; from 1986 - the year in which the legislation took effect - until 1988, Medicare revenue for optometrists increased from $11.9 to $81.3 million; the market share for optometric and ophthalmic services provided by optometrists rose from 2.6 to 11.1 percent.[5] In the same

period, total part B payments to all providers of optometric and ophthalmic services rose by only 59 percent.

One consequence of the changes brought about by the Medicare Fee Schedule, is an increase in Medicare payments for optometric services. Since optometrists have traditionally charged lower fees than ophthalmologists for similar services, payment parity will increase the cost of eye care even without a change in volume. As reported in a 1989 study, the average cost of a routine examination performed by an optometrist was $41; performed by an ophthalmologist, the average charge was $61.[6]

3.2.2 Podiatry

A Doctor of Podiatric Medicine (D.P.M.) is a professional who deals with the examination, diagnosis, treatment, and prevention of diseases, conditions, and malfunctions affecting the human foot.[7] Doctors of podiatry are educated, clinically trained, and state licensed to care for problems of the feet, either local or as a result of health problems elsewhere in the body. Among the services they provide are: routine office care and surgical procedures including excisions, incisions and drainage, destruction procedures, and bone, joint, muscle, and tendon surgery. Doctors of Podiatry increasingly specialize; there are three podiatric specialty boards: orthopedics, surgery, and public health.

Nearly all private and public insurance plans cover the services of podiatric medicine. Professional parity with

physicians was included as part of the original enabling legislation for Medicare (P.L. 87-97). Demand for services provided by podiatrists has been increasing rapidly. In 1984, there were approximately 40 million visits to podiatric physicians; the number was expected to exceed 50 million in 1991. In 1989, the 50 top dollar Medicare part B services for podiatry represented almost 15 million visits.

3.2.3 Clinical Psychology

Clinical psychologists are recognized under several federal laws as independent practitioners who may provide services within the full range of state licensure.* The demand for services provided by mental health providers has been increasing rapidly, encouraged in part by state-mandated coverage requirements. In 45 states, private health insurers are required by law to pay for services provided by licensed clinical psychologists. Congress recently granted Medicare beneficiaries direct access to qualified psychologists (P.L. 101-239). Citing this legislation, the American Psychological Association (APA) has requested reclassification of clinical psychology as a limited license profession similar in status to optometry or podiatry.

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*Psychologists are authorized to receive payment for diagnostic and therapeutic services for Social Security disability hearings. Psychologists are also recognized in the Federal Rules of Criminal and Civil Procedure as providers of expert testimony on mental disease or defect or other condition relating to competency to stand trial. Finally, both CHAMPUS and the Federal Employees Health Benefits Program grant subscribers direct access to independent clinical psychologists.

Licensure requirements differentiate psychologists from other Medicare recognized non-physician providers by allowing for independent practice without medical supervision. Clinical psychologists believe that the training they receive in the diagnosis and treatment of mental, emotional, and behavioral disorders is substantially greater than that of other NPP professions.[8] Clinical psychology is the only profession in this category whose members are required to complete a Ph.D. or equivalent doctoral level degree. On average, it takes six years to complete the degree; following it, most states require one or two years post-doctoral experience prior to licensure.

Psychologists, psychiatrists, and psychiatric social workers all provide psychotherapy services. Psychotherapy is provided in the same way by all three, with differences in treatment due not to training but to the individual analytic focus -- e.g. Freudian, Jungian, cognitive. Psychologists are the most frequent providers of biofeedback and behavioral therapies. Of all the mental health services provided by psychiatry, only psychopharmacology and electroconvulsive therapy (ECT) lie outside the realm of clinical psychology. Recently the Department of Defense has undertaken a feasibility study to determine the effect of extending limited prescription privileges to appropriately trained psychologists. Psychology and psychiatry are differentiated by their differing approaches to diagnostic assessment and testing. Due in large part to differences in training, psychologists believe that they possess

a more diverse and extensive diagnostic tool kit than do psychiatrists.[8]

Psychologists are well aware of the economics of competition between psychology and psychiatry. In their testimony to the PPRC in 1990, the APA stated:

> "(I)t is apparent that psychologists and psychiatrists are economic competitors where they practice in the same geographic area. ..(D)ata from a study funded by the National Institute of Mental Health indicate that psychiatrists' fees decrease by 9% when psychiatrists and psychologists compete in states with freedom-of-choice laws.[9]

3.2.4 Relations with the Medical Professions

Podiatry, optometry, and clinical psychology provide services also provided by one or more medical specialties, leading to concerns about the comparability of services and rates of reimbursement. Each profession, however, has different concerns -- optometry is squeezed between ophthalmology, which is promoting itself as a primary care specialty, and opticians, who are pressing for the right to perform refractions. Clinical psychology wants fiscal parity with psychiatry for their common services, arguing that the services they provide are the same or equivalent. Podiatry, having been recognized as a limited license specialty since the inception of Medicare and Medicaid appears to have fewer concerns.

3.3 Methodology

Much of the methodology used for this task has been described in detail elsewhere.[10,11,12] The methodology includes the selection of Technical Consulting Groups (TCGs) for each profession, identification of the services provided, development of vignettes for evaluation and management services, identification of respondents, collection of data through two types of mail surveys, analysis, review, and placement of services on the common scale of work. The remainder of this section describes the methods common to all three specialties.

3.3.1 Technical Consulting Groups and Assessment Panels

In order to study the work of these professions, we recruited a group of experts in each profession to advise and assist us. We called these Technical Consulting Groups (TCGs), as they served the same function as the TCGs for the medical specialties. Table 2.1 lists the members of the three TCGs.

Each specialty provided us with nominees, chosen to represent the breadth of the profession: geographic, academic vs. community based, and sub-specialties. We chose a smaller group from each specialty, balancing across these variables, to constitute the TCGs. The remainder of the nominees served as members of the assessment panels.

In our proposal to HCFA, we suggested that data be collected by mail using small panels (15-30 respondents) from each profession. This was the method used to collect data on a large

number of procedures during phase III, and it proved quite efficient for collecting a great deal of information in a short period of time.[10] Since no new relative values were being estimated -- at least for optometry and podiatry -- we proposed the small group method as the most effective for our needs. When this sampling design was presented to the TCG for clinical psychology at our first face-to-face meeting, there were strong objections. The TCG argued that, in contrast to optometry and podiatry where all the services had been studied in one or more medical specialties and where our primary goal was to obtain illustrative vignettes for codes whose values had been established, the most important service provided by clinical psychologists -- psychological testing -- had not been previously studied. Members of the TCG commented further that testing is very specialized; a psychologist may do only neurological assessments or children or gerontological patients. We agreed with the recommendations of the TCG regarding sample size and requested additional financial support from the American Psychological Association (APA). These funds were used to field a mail survey sent to a random selection of doctoral level clinical psychologists. Additional details on the sample and the survey can be found in Section 3.4

3.3.2 Identification of Services and Vignettes

In order to select illustrative vignettes for those E/M services provided by limited license and non-physician

practitioners, we needed to create specialty-specific examples for each profession. We also identified those services provided in common with medical specialties to enable us to compare professions and place them on the common scale of work.

The American Podiatric Medical Association drafted a set of vignettes describing typical E/M services prior to our initial TCG meeting. We reviewed, revised, and supplemented these vignettes with the help of members of the TCG, and created vignettes for optometry and for clinical psychology. We also identified vignettes from other specialties -- ophthalmology in the case of optometry, orthopedics and general surgery in the case of podiatry, and psychiatry in the case of clinical psychology -- that were appropriate to include in a study of work.

In addition to E/M vignettes, we examined the work and time required to deliver other profession-specific services. The addition of these services permitted us to compare these professions with their medical counterparts and to link them, where appropriate, onto the common scale of work. In our study of podiatry, we collected data on seven surgical services for which podiatrists were major providers. We also surveyed podiatrists on the work of multiple surgical procedures (see Chapter 6).

The surveys were constructed using methods developed previously.[10,11,12] We asked respondents to estimate the intra-service (where appropriate) and total time required to provide a

service, followed by estimates of intra-service and total work. The last section was used to collect demographic and practice information. For clinical psychology, our methods were somewhat different. We wanted to test a number of hypotheses about the work of psychological assessment that required us to obtain substantial detail about the process. Because of the level of detail required for these services and because we had two vignettes for every type of assessment service, we had to design a split-sample survey. All respondents rated the diagnostic and therapeutic vignettes on the survey. Half of the full sample rated eight assessment vignettes while the other half rated eight different assessment services. As we describe later, the rate of incomplete or inconsistent responses for the assessment services was so great that we designed and fielded a third survey instrument and surveyed another sample of psychologists about all of the assessments.

3.3.3 Data Collection and Analysis

Data for optometry and podiatry were collected from the RBRVS Assessment Panels described above. Data for clinical psychology were collected from randomly selected samples of a pre-screened population of licensed, practicing clinical psychologists. Data were checked, edited, and analyzed using methods developed in phases I through III, and described in Chapter 2.[10,11,12]

3.3.4 Placing the Specialty Examples on the Common Scale of Work

Once the data were cleaned and means and standard errors computed, we needed to compare the results with the corresponding work values obtained earlier for these vignettes from other specialties. We did this in order to place the work values obtained for these three professions onto the scale of work common to all medical specialties.

We used three criteria in selecting services of comparable work to use as links to the common scale. First, we considered only services described similarly in the survey of one of the professions and in that of the medical specialty compared. Second, we required the surveyed time estimates for the service obtained from the profession and the specialty to be similar. Third, we required the relative work relationships across the services in common between the profession and the compared specialty to be similar. Services meeting these criteria were selected as links to be used in placing the profession on the common scale.

The selection of links for this task is similar in some ways to that used for all specialties in phases I and II. In our earlier work, we considered as links those services worded the same on the surveys of the two specialties to be linked. Further, we examined the surveyed estimates of time in evaluating potential links. Finally, the relative work relationships between specialties played a role in the importance of services in the linking process.

Despite these similarities, the selection of links for the current study differs in one important way from the process used in our earlier work. In particular, in phases I and II, we employed formal cross-specialty meetings to identify links. At these face-to-face meetings, panelists from each specialty discussed their services and whether they were equivalent in work to those of a second specialty. Cross-specialty meetings between podiatry, optometry and clinical psychology and the medical specialties were not performed in this study.*

We believe the methods we used to link the relative values for these professions onto the common scale have produced reasonable results. As shown below, the work and time values for podiatry and clinical psychology satisfy the three criteria outlined above and suggest that the links we employed have some validity. Further, for optometry, we used a reasonable set of assumptions to create examples to use for the E/M codes. However, the lack of a formal cross-specialty meeting to select links raises some concerns about our findings. For example, a cross-specialty meeting may produce a different set of links than those used in the current study. A different set of links may produce common scale values for these professions which vary systematically from our findings. These concerns can only be resolved with certainty following further research.

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*Our original proposal included additional investigations into the comparison of the LLPs and medical specialties, including a formal cross-specialty meeting. Due to other considerations, these proposed investigations were excluded from the scope of the study by the funding agency.

After selecting services to serve as links, we computed the ratio of the work of the medical specialty to that of the profession for each of these services. To place services onto the common scale, we multiplied each of the profession's work estimates by the mean value of this ratio across all links for the profession.

In attempting to place services onto the common scale, we compared podiatry with orthopedic and general surgery, optometry with ophthalmology, and clinical psychology with psychiatry. As mentioned above, we included services from these specialties on the surveys of podiatry, optometry, and clinical psychology to serve as potential links.

We compared time and work for all three professions; podiatrists' responses resembled those of the surgical specialists for common services. Clinical psychologists were able to rate all therapeutic services and were very similar to psychiatrists in their perceptions of time and relative work. Optometrists, however, as we describe below, did not rate the time of comparable services similarly to ratings provided by ophthalmologists. In choosing illustrative vignettes for E/M codes, this needed to be taken into account.*

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*In this study, we examine whether the work and time of services performed by these professions is the "same" as that in a comparable medical specialty. However, we do not consider the differential outcome of the service or the human capital or opportunity cost of training involved for these professions. As discussed in Chapter 7, these should be important considerations in determining the rate at which LLPs and NPPs should be compensated.

In the remainder of this chapter, we describe the methods, analyses, and results for each profession in more detail. We were able to identify illustrative vignettes for the E/M codes for both podiatry and optometry. We measured the work of assessments for clinical psychology and carried out a number of statistical tests to determine if additional codes were needed to describe these services. We found that the current coding system was sufficient to differentiate the work of different types of assessments.

3.4 Optometry

3.4.1 Objectives of the Study of Optometry

The major objectives of our study of optometry were: (1) to establish relative values for the work of evaluation and management services provided by optometry; (2) to study specialty-specific examples of E/M services for this profession; and (3) to compare the work of optometrists with ophthalmologists for E/M services and with the medical profession as a whole.

3.4.2 Methods Specific to Optometry

To achieve our objectives, we chose members for the TCG from the nominees of the American Optometric Association (AOA). (See Table 2.1 for the list of TCG members.) We met with the TCG at the end of October to formulate and test a survey instrument. The panel helped create vignettes for the general E/M codes used by optometry, namely office visits and consultations, and the

specialized ophthalmology codes, CPT 92002-92014. In order to compare optometry and ophthalmology, we included E/M vignettes from the latter as well as testing codes for which we had already obtained estimates of work. The instrument can be found in Appendix F and the vignettes in Table 3.1.

We selected 24 members for the Assessment Panel, including the TCG, from a list of nominees provided by the AOA. Table 3.2 provides a profile of the Panel: 88 percent were self-employed, 83 percent were fee-for-service, and 38 percent were in solo practice. Optometrists reported that the median weekly patient load was between 100 and 150 patients in the office, and 1 to 5 in the hospital.

We mailed a single survey containing 26 vignettes to the Assessment Panel. Tables 3.3 and 3.4 present the results for work and time for optometry. We report both intra-service and total work and time of visits; we measure only the total work and time of tests and other specialized services. Few of the standard errors for work exceed ten percent, indicating considerable agreement among panel members regarding the work of most services; the standard errors for time are smaller than for work.

3.4.3 Choosing E/M Vignettes

While the members of the optometry TCG assigned E/M CPT codes to vignettes at our first meeting, our experience has been that these ex ante assignments rarely completely match those made

ex post.[11,12,13] We needed to evaluate these assignments in order to assign CPT codes to each vignette.

The definitions that accompany E/M codes in the CPT manual, starting in 1992, have three parts: a description of the clinical content of the code, an average intra-service time, and illustrative vignettes. While the relative values for the codes reflect the work of the code, there is a strong correlation between work and time.[13] There are two ways in which to assign optometry vignettes to CPT codes: by work or by time.

Using work requires that we show that optometrists expend the same amount of resources as ophthalmologists to provide the services they share. An examination of the data does not permit us to draw that conclusion. Tables 3.5 and 3.6 display the time estimates for optometry and ophthalmology for services worded similarly on the two surveys. As shown, it is clear that for all common services, optometrists take less time to provide them and spend **proportionately** less time before and after the service. For example, for the vignette "follow-up office visit for a 70 year old established patient with chronic open angle glaucoma (not including prescription of glasses);" we found that optometrists spend 19 minutes face-to-face and ophthalmologists spend 22 minutes. Optometrists spend 26 minutes overall or seven minutes on pre- and-post service work, while ophthalmologists spend 36 minutes in total or 14 minutes on pre- and post-service work.

Based on these data, we could not assume comparability of work for these services. We needed, therefore, to choose a measure that would allow us to assign optometry vignettes to the appropriate E/M code. We chose to use intra-service time; we argued that the differences in the relative amounts of pre- and post-service time for optometry and ophthalmology could well reflect differences in style or the amount of record-keeping required. In addition, intra-service (or face-to-face) time is used in the descriptions of the E/M codes and would be easy for optometrists to adopt. Further, we have earlier shown that intra-service time is an excellent predictor or work for E/M codes across all specialties.[13] In choosing this approach, we assume this finding extends to optometry E/M services. In other words, we assume that the work per minute for optometry is similar to that for medical specialties. Thus we assigned vignettes to codes based on their intra-service time.

Table 3.7 presents our suggested illustrative vignettes for office visits and consultations. We provide illustrations for the ophthalmology-specific visit codes as well as for the general E/M codes used by all specialties and professions. For two of the codes -- CPT 99203 (level 3 office visit, new patient, typical time 30 minutes) and CPT 99212 (level 2 office visit, established patient, typical time 10 minutes) -- we provide two examples. In all other cases, we chose only one vignette.

3.5 Podiatry

3.5.1 Objectives of the Study of Podiatry

The major objectives of Harvard's study of podiatry were similar to those for optometry: (1) to establish relative values for the work of evaluation and management services provided by podiatrists, (2) to measure the work of specialty-specific vignettes describing E/M services, and (3) to place these vignettes on the common scale of work. In addition, as described in Chapter 6, we undertook a study of the work of multiple procedures for podiatry as a part of Task IV.

3.5.2 Methods Specific to Podiatry

To achieve our objectives, we chose members for the TCG from the nominees of the American Podiatric Medical Association (APMA). We met with the TCG at the end of October 1992 to formulate and pre-test a survey instrument. The APMA had already prepared a number of E/M vignettes that we discussed. The panel chose as the standard service "Office visit of a 48 year old female who jammed her left toe on the corner of the couch. The nail was found to be 80 percent avulsed distally; there is local pain, swelling, and bruising." (This vignette has been dubbed the "Killer Sofa" vignette.) In addition, we worked with the TCG to choose vignettes that had already been measured and validated in studies of other specialties. Since there were only two E/M vignettes in common with other specialties, we also included a

number of surgical procedures on the survey.* (The survey instrument can be found in Appendix F. The 36 vignettes included on the survey are shown in Table 3.8.)

We selected 24 members for the Assessment Panel, including the TCG, from a list of nominees provided by the APMA. Table 3.9 profiles the Panel: 88 percent were self-employed, 71 percent were compensated on a fee-for-service basis, and less than 20 percent were in solo practice. The respondents reported that the modal weekly patient load was between 100 and 150 patients in the office; most podiatrists did not see hospitalized patients.

We mailed an initial survey containing the E/M vignettes written by the podiatrists and the eight common vignettes drawn from other specialties. Tables 3.10 and 3.11 present the results for work and time for podiatry. For visits, we report both intra-service and total work and time; as with other specialties, we only measured the total work and time of services in skilled nursing facilities, and only measured the intra-service ("skin-to-skin") work and time of the surgical procedures. Few of the standard errors for work exceed ten percent, indicating considerable agreement among panel members regarding the work required to perform the service; the standard errors for time are in general smaller.

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*It should be noted that the TCG did not want us to study surgical procedures for podiatry despite the explanation that it was necessary for linkage. Several of the members did not rate these services.

3.5.3 Choosing Podiatry Vignettes for E/M Codes

While members of the TCG for podiatry had assigned the vignettes to specific E/M codes, our experience has been that the ex ante assignments rarely map exactly to those made once we have measured the time and work required. In order to rank and assign the vignettes properly, we need a method to place them onto the common scale. As with optometry, there are two ways in which to assign podiatry vignettes to CPT codes: by work or by time.

Using work requires that we can compare the work of podiatry and other specialties for the services they share. Examining the data, we found that while there were differences in time and relative work for common services, these differences were not systematic. Looking at Table 3.12, the time estimates and the spacing for relative work required are, in general, similar for podiatry and the other specialty. In Table 3.13, we compare the ratios of intra-service to total time and work for E/M services; again, the typical ratios for podiatry are similar to those for the comparison specialties reported at the bottom of the table.

We concluded that podiatry can be placed on the common scale of work using the eight services shown in Table 3.12 as links. For each of these service, we computed the ratio of intra-service work for the comparison specialty relative to podiatry. We multiplied the work values for podiatry by the unweighted mean of this ratio (0.48) to obtain work estimates for the profession on the common scale.

We used the estimates of work for podiatry to assign vignettes to CPT codes. Table 3.14 presents our suggested illustrative vignettes for office and skilled nursing facility visits. We include in the table the work and time values for the vignettes and those values for the code.* In almost all cases, we present two vignettes for each CPT code. In general, our ex-post assignments of vignettes were those assigned by the podiatrists before the study. There was one exception -- the new skilled nursing facility (SNF) codes were not correctly interpreted by podiatry. It is very unlikely that a podiatrist would perform an assessment in the SNF (CPT 99301-99303) -- these are provided by primary care physicians. Thus there are only two SNF visit codes with assigned vignettes.

3.6 Clinical Psychology

3.6.1 Objectives of the Study of Clinical Psychology

HCFA specified four objectives for our study of clinical psychology: first, to create vignettes to study psychotherapy and psychological testing that were consistent with those used previously; second, to measure the work and time of these vignettes; third, to estimate the work of psychological testing; and fourth, to compare the work of clinical psychologists relative to that of psychiatrists.

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*The work value for the code is the value produced in phase III of the RBRVS study.

3.6.2 Methods Specific to Clinical Psychology

Our study of clinical psychology began in the same manner as those for optometry and podiatry: we selected a TCG and an Assessment Panel; we chose vignettes from psychiatry to compare work; with the help of several members of the TCG, we wrote new vignettes that reflected areas of practice not studied in psychiatry; and presented this to the TCG at our first meeting. We intended, at this TCG meeting, to discuss methods for measuring the work of psychological assessments and to write descriptions of assessment services. The TCG, however, immediately expressed its concern about the proposed size of the sample. Several members argued that we were proposing to collect data from only a very small sample and use this data to set the relative value of a code that comprised a substantial fraction of the Medicare payments to psychologists (15). They further argued that there was substantial specialization within psychological testing and that the number of respondents for a specific CPT code, given a small sample size, could be very small. We agreed with the need to increase sample size and proposed such an expansion to the APA, which funded it in January, 1993.

At this meeting, we also discussed the process of performing psychological assessment and agreed that we would report to HCFA in units of an hour of testing (including pre- and post-service work). The TCG presented their hypothesis that the most frequently used testing code - 90830 - was too broad and needed to be subdivided into four types of testing. At the meeting we

also wrote an initial set of vignettes that described different testing situations, various types of patient, and different presenting problems.

We defined the intra-service work of psychological assessments to include the work spent by the psychologist face-to-face with the patient for all tests in the assessment. This may include explaining the tests to the patient, administering the tests, and required sequential decision making (including selection of the tests). The intra-service work excludes the work of the initial interview, which was treated as a separate service. This work also excludes the work done by the patient (self-administered tests) or another provider.

In addition to the intra-service work, we defined the total work of psychological assessments to include the work before and after the administration of all tests in the assessment. This work may include: reviewing available medical/psychological records before the tests, scoring the tests, interpreting test results, communicating with other professionals (e.g., telephone consultation with referring agency/person), and writing the report. We used these definitions to cue the respondents for the work and time of assessment services in the surveys.

3.6.2.1 Surveying Clinical Psychology

There were a number of issues to be resolved before surveying clinical psychology: first, what was the sample size and how would it be stratified, if at all? Second, how were we

to elicit data on testing? Should individual tests be used as guidelines? What hypotheses about the assessment process did we wish to examine? As a consequence of this, how would we measure the pre- and post-service work of assessments and produce relative values?

3.6.2.1.1 Sample Selection

The sampling design had two-stages; first, the APA surveyed some of its membership to obtain 2000 responses. This questionnaire provided information on highest degree held, whether or not the psychologist performed testing and of what general type, and hours per week of practice. We requested a geographically-balanced sub-sample of 500 respondents,* actively practicing 20 hours per week or more, and holding a Ph.D. or equivalent degree -- similar to the strata used for physicians.

From this sub-sample, we chose 250 names, geographically stratified by census region, as the initial sample. Based on our past response rate of 60 percent, we expected to obtain a minimum of 150 responses. Our TCG suggested that some of the testing situations were sufficiently specialized that we were unlikely to get many responses; they felt that as few as 20 percent might feel competent to rate some of the neurological assessments.

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*We stratified geographically based on the distribution of psychologists as reported in Kohout JL and Wicherski MM: "Salaries in Psychology 1991." Office of Demographic, Employment and Educational Research. American Psychological Association, 1992.

As we discuss in the next section, we employed a split sample design; both panels A and B provided data on evaluation, diagnostic, and therapeutic vignettes, but each evaluated only half the assessment vignettes.

We also fielded a revised survey to a third panel (panel C) as described below. We mailed out 125 surveys to panel C containing a subset of the evaluation, diagnostic and therapeutic vignettes and all the assessments. Table 3.15 presents the vignettes studied in surveys A, B, and C.

3.6.2.1.2 Measuring the Work of Assessments

In addition to establishing values for the five CPT codes for psychological testing and neurological assessments, we wished to explore several issues. These were 1) whether there is a difference in intensity (work per unit of time) between intra-service and pre- and post-service work, 2) whether the ratio of intra-service to total time and work differ by CPT code, and (3) whether, as posited by the TCG, there are significant differences in intensity among four proposed subcategories of assessments reported under CPT 90830 -- psychological testing by physician, with written report, per hour. These four subcategories were: (A) intellectual function achievement; (B) personality/ psychopathology; (C) behavioural medicine/rehabilitation; and (D) adaptive functional assessments.

After much experimentation and pre-testing, we designed an approach for measuring the work of assessments that was

characterized by an introductory vignette, a list of commonly used tests for the vignette, a column for who administered them, a column to measure how much intra-service time and work the psychologist provided, and the total of work and time for the entire assessment. (See Appendix F for examples.) Given the complexity of the survey, we divided the sixteen assessment vignettes between Survey A and Survey B. Thus, each survey contained all the evaluation, diagnostic, and therapeutic vignettes and half the assessment vignettes.

This approach for surveying the assessments proved unworkable; despite extensive review and informal pretesting of the surveys, we found that many respondents to survey A and B were unable to rate the assessment services appropriately. For example, respondents often gave an estimate of total work or time that was less than the sum of their estimates for the parts of the service or rated the total time for a task as less than the intra-service time. Further, we had as few as 14 responses for some services; two-thirds of the respondents to survey A did not provide any data for four or more assessment services. We received similar inconsistent and incomplete results from survey B.

To study the assessment services, we fielded a third survey, survey C, in which we simplified our previous approach. We continued to use the 16 assessment vignettes developed for surveys A and B. However, we eliminated questions concerning who administered the tests and did not ask about the individual tests

that comprised each assessment service. To measure work and time, we used previously tested methods, asking for intra-service and total time for the entire assessment followed by the intra-service and total work required.[11] Although we could not evaluate the effect of who administered a test on work, our approach would still allow us to determine the hourly work of assessments and to test hypotheses regarding differences in work and time between and within CPT codes for assessment services.

3.6.2.2 Measuring Work

We used the magnitude estimation approach used in phases I and II to measure the work of clinical psychology services.[14] Using this method, we asked respondents to rate services by comparing them to a single reference service. The details on the estimation of intra-service work have been presented previously in Chapter 2 and elsewhere.[10,11,12,14,15]

Pre- and post-service work accounts for a portion of the total work of each service. For psychotherapy and psychological assessments, we measured pre- and post-service work using the approach developed in phase II for all specialties including psychiatry.[11] We first asked respondents to estimate the intra-service work of a given service, and then to estimate the total work of the same service. Pre- and post-service work is thus the difference between the two. As described above, we also used this approach to measure the work and time of the assessments in survey C.

3.6.3 Results

In Table 3.16, we present the response rates for each of the surveys of clinical psychology and the characteristics of the responding sample. For surveys A and B, taken together, the overall response rate was 67 percent (184); for survey C, 77 percent (96). Of these, 31 were not usable in surveys A and B, and 10 in survey C for one of the following reasons: the respondents did not meet 20 hour minimum for seeing patients; not a holder of a doctoral level degree; left entire survey blank; did not provide work values, only time; and, not providing responses for at least half of the services.

Tables 3.17 and 3.18 present the results of our study of the non-assessment services from surveys A and B for clinical psychology. As can be seen from the tables, the standard errors of work and time are small, indicating close agreement among respondents.

Table 3.19 presents a comparison of estimates of time and work for psychiatry and clinical psychology. On average, the ratings of time from clinical psychologists are very similar to those of psychiatrists for the same vignettes. Further, the relative spacing of the work values is similar. We concluded that we could use these 11 common services as links to psychiatry and thus to the common scale of work. We multiplied the work values for psychology by the mean ratio of intra-service work for psychiatry to that for psychology (0.992) to place the psychology values on the common scale.

As described above, we studied the assessment services using a separate sample and survey C. In order to integrate the values for assessments onto the scale of work for surveys A and B, we had to show that estimates of work for the common non-assessment services were similar across all three surveys. Comparing the work of the 14 services included on all three surveys using a t-test, we find that work values for only two of the services are marginally different. These results are shown in Table 3.20. We concluded that we could integrate the results for the assessment services from survey C with those for the non-assessments from surveys A and B.

3.6.3.1 Results for Assessments

Tables 3.21 through 3.23 present the work values for the five assessment codes that we studied. Intra-service and total time and work for each vignette are shown in Table 3.21, along with the standard errors and numbers of respondents. As shown, the standard error for work and time are small, indicating close agreement among respondents. The table also displays the ratio of intra-service to total time and work. In contrast to the psychotherapy services in Tables 3.7 and 3.18, the pre- and post-service period for assessments is almost as long as intra-service time. Similarly, pre- and post-service work on average is more than one-third of the total.

Table 3.22 presents the total work for an hour of assessment sorted by vignette. CPT code 95882 is the most intense; the

average of total work per hour is 35 percent (and more) higher than that of other assessment codes. This service -- "assessment of higher cerebral functioning with medical interpretation; cognitive testing" -- is most often a bedside service provided to evaluate the status of a critically-ill hospitalized patient. The differences between the work values of the other assessment codes is substantially less.

In Table 3.23, we report the results of a number of statistical analyses of the data on assessment services. First we tested the hypothesis put forth by members of the TCG and by a committee of the APA that the primary testing code - 90830 - should be divided into four separate codes. An analysis of variance, testing for differences by sub-code, was not significant. Inspecting Table 3.22, we see that the greatest difference in work per hour is between two vignettes within the same sub-class. We also tested whether there were significant differences between the means of intra-service and total work per hour comparing 90830 with the testing of higher cerebral functioning (95880-95883) and between 95882 and the remaining codes for higher cerebral functioning. In both cases the differences were significant at the 0.1 percent level.

3.6.4 Validity of the Results

We presented the results for clinical psychology to the members of the TCG at our second meeting on April 29, 1993. The TCG agreed that the work values for the diagnostic, evaluative,

and therapeutic vignettes had face validity. While the times seemed right for the assessment services, they believed that the work per hour values lacked face validity; the panelists argued strongly that the values were too low. We found that the work per hour for assessments was 40 percent less on average than that for selected psychotherapy services. The TCG argued that the work per hour of assessments was at least as great or up to 140 percent of the work of psychotherapy and that the work per hour of CPT 95822 -- Assessment of higher cerebral functioning; cognitive testing -- was closer to twice that of psychotherapy.

We discussed a number of possible hypotheses why the work per hour values for assessments appear low:

- Respondents were unable to stretch the scale of work; this would tend to compress the estimates for longer services such as the assessments;
- Psychologists tend to think in terms of work per hour and were unable to accurately estimate the work of the whole assessment;
- Responses might have had more validity had we measured work per hour directly; and
- Psychologists have overestimated the time involved and the work estimates may be correct.

It would require significant funds to conduct additional research that would identify which, if any, of these hypotheses were valid, or to reestimate the work of these codes. We do not have such resources available at this time. Our remaining

options were to present the data without reservation, or to suggest a range within which we believe the work belongs. We carried out additional exploratory analyses of the survey data and reviewed the critical comments of the TCG. In addition, we sought advice from independent experts. This process included consultation with two salaried clinical psychologists with experience in both psychotherapy and assessments. In our meeting with these psychologists, we probed the issue of methodology by surveying them on the work of these services using three different formats for the survey and by discussing the work of assessments in an open-ended, qualitative way. The consultants concurred with the TCG that the work per hour of performing assessments is equal to or exceeds that of performing psychotherapy.

Based upon our examination, analysis, and qualitative review of the data on assessments and consultation with additional experts, we agree with the members of TCG that the work per hour of assessments we obtained is too low. Although we used methods that were developed and validated over many years and for many specialties, they appear not to be well- suited to measuring the work per hour of these assessment services. We do not think that identification of the methodological flaws is feasible in a short time and with limited resources. We recommend that HCFA set values for the assessment codes that reflect the consensus that these services are at least as difficult per hour as therapy.

In Table 3.24, we present a possible range of total work per hour for each of the assessment codes. The entries reflect the following assumptions:

1. That the total work of 90844 (45 or 50 minutes of individual psychotherapy) is 128, of 90801 (psychiatric diagnostic interview examination) is 185;*
2. That the ratio between intra- and total-service time that we obtained for assessment services are correct (ranging from 47 percent intra for CPT 95881 to 61 percent for 95883;
3. That the relative intensities (work per unit time) for intra-service and pre- and post-service work we measured for assessments are correct; and
4. That respondents rated the relative work of assessments correctly (e.g. that the work of 95882 is almost 50 percent more per unit time than 90830).

Using these assumptions, we constructed values for work per hour under three different scenarios: first that the intra-service work of CPT 90830 (testing) was as intense as psychotherapy (90844), second that it was as intense as the initial evaluation (90801), and third, that the intensity of intra-service work was 1.2 times that of psychotherapy. The latter option was chosen as being in the middle of the range hypothesized by the TCG.

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*These total work estimates are from the phase III study of psychiatry.

The values we computed are presented in Table 3.24. As shown, these scenarios provide values of work per hour for each code under the three scenarios. We recommend that HCFA set the values for the assessment codes as shown in the third column of Table 3.24 (1.2 times the intra-service work per hour of 90844). This choice is consistent with the view of the TCG psychologists that the intensity of assessments lies between 1.0 and 1.4 times that of the reference standard psychotherapy vignette and that of the outside salaried psychologists we consulted confirmed that the intra-service work per hour of assessments is equal to or exceeds that of performing psychotherapy. Our recommendation, therefore is for the following values (work per hour) for the assessment codes: CPT 90830 (128 units), 95880 (130 units), 95881 (125 units), 95882 (190 units), and 95883 (132 units).

3.7 Discussion

We found that it was possible to compare podiatry, optometry, and clinical psychology with the medical specialties providing the same or similar services and to select illustrative evaluation and management vignettes for both. We used different techniques for each specialty in order to assign vignettes to the appropriate CPT codes. In the case of podiatry, we were able to link the work of podiatry to the common scale and selected vignettes based on their values for intra-service work. For optometry, we did not link by work and, instead, used values for intra-service time to select illustrative vignettes for the E/M

services the profession provides. For clinical psychology, we found that the time and relative work of diagnostic and therapeutic services are similar to those found for psychiatry and used this result to link their services to the common scale.

We also studied, in clinical psychology, the work of services unique to the profession (i.e., psychological and neurological assessments of patients). We have recommended values for the total work per hour for these services and have reviewed the current coding system and found it to be adequate to describe work.

Our results for optometry suggested that optometrists take less time than ophthalmologists to perform the same service. There are two major alternative explanations for this finding. One is that optometrists perform the same services as ophthalmologists, but deliver them more effeciently. The other is that the services performed by optometrists are different in scope from those of ophthalmologists, perhaps by virtue of their training or of the population of patients that they see. Our data do not allow us to distinguish these alternative explanations with certainty. To do so would require investigations of the content of these services and/or the characteristics of patients seen by both professions, studies that are outside the scope of the present study.

Our results for optometry poses an immediate problem with respect to current Medicare payment policy. If optometrists are to be paid (as LLP's under the policy that there are no specialty

differentials) we would appear to be paying optometrists the same amounts for less work than when the services are performed by ophthalmologists.* One solution would be to revise the codes in a manner that describes the services differently. Another solution would be to call for differences in payment, based on differences in work.

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*This problem does not relate to the E/M codes we studied for optometry, but for the specialized ophthalmological services (CPT codes: 92004, 92012, 92014, 92081, 92082, 92225, 92226, 92250, and 92353). For the E/M codes, we chose optometry vignettes consistent with the time values incorporated into the code descritpions. If optometrists base their coding on these clinical examples and typical times, payment for the E/M codes will be resource-based.

Endnotes

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Table 3.1

List of surveyed services and procedures: Optometry

CPT	Svc	Service/Procedure
92012	*	Previously scheduled follow-up visit for a 75-year-old patient with a known cataract, to see if surgical intervention is needed, see if surgical intervention is needed, not requiring comprehensive ophthalmologic service.
99204	a	Initial evaluation of a sudden onset of loss of vision in a 65-year-old diabetic.
99212	b	Follow-up office visit for an established patient who came in complaining of a red eye with a subconjunctival hemorrhage.
99203	c	Initial office visit for a 15 year old patient who consistently complains of eye irritation after swimming practice.
92012	d	Follow-up office visit for a 70-year-old established patient with chronic open angle glaucoma (not including prescription of glasses).
99213	e	Follow-up office visit for an established patient with slightly elevated ocular tensions who, when last seen six months ago, had pressures of 22 mm Hg.
99242	f	Office consult for a general practitioner regarding a patient with eye pain. The general practitioner cannot see any ocular abnormality.
92002	g	Initial office evaluation of a 10-year-old male who has allergies and complains of an itchy burning sensation in both eyes.
99212	h	Follow-up office visit with a patient who is being treated for dry eye.
92004	i	Initial office evaluation of a 45-year-old blurred vision (not including prescription of glasses).
92002	j	Initial office evaluation of a 55-year-old patient with blurred vision in left eye.

NOTE: CPT five digit codes and/or nomenclature are copyright 1992 American Medical Association.

Table 3.1 (continued)

List of surveyed services and procedures: Optometry

CPT	Svc	Service/Procedure
99202	k	Initial office visit with a patient who presents with a sty (internal hordeolum).
92004	l	Initial office evaluation of a 66-year-old patient with new onset of blurred vision and diplopia (not including prescription of glasses).
92014	m	Office evaluation of a 74-year-old established patient with homonymous hemianopsia (not including prescription of eyeglasses).
92012	n	Follow-up office visit for a 60-year-old established cataract patient who requires continued care because of visual field and symptom changes who was last seen six months ago.
99203	o	Initial office visit with a patient who presents with pain in one eye.
92082	p	Interpretation of an intermediate visual field examination, with medical diagnostic evaluation, using several isopters on Goldmann perimeter or multilevel full-field automated test (including performance if applicable).
92225	q	Initial extended ophthalmoscopy, both eyes, with medical diagnostic evaluation for a patient with persistent flashes and floaters.
92250	r	Ophthalmoscopy, with medical diagnostic evaluation; with fundus photography.
92081	s	Visual field examination, unilateral or bilateral, with medical diagnostic evaluation; limited examination (eg, tangent screen, Autoplot, arc perimeter, or single stimulus level automated test, such as Octopus 3 or 7 equivalent).

NOTE: CPT five digit codes and/or nomenclature are copyright 1992 American Medical Association.

Table 3.1 (continued)

List of surveyed services and procedures: Optometry

CPT	Svc	Service/Procedure
92083	t	Interpretation of an extended visual field examination with quantitative perimetry and medical diagnostic evaluation (including performance, if applicable).
92100	u	Serial tonometry (separate procedure) with multiple measurements of intraocular pressure over an extended time period with medical diagnostic evaluation, same day (eg, diurnal curve or medical treatment of acute elevation of intraocular pressure).
92226	v	Ophthalmoscopy, extended as for retinal detachment (may include use of contact lens, drawing or sketch, and/or fundus biomicroscopy), with medical diagnostic evaluation; subsequent.
92326	w	Replacement of contact lens.
92353	x	Fitting of spectacle prosthesis for aphakia; multifocal.
92020	y	Bilateral gonioscopy, with medical diagnostic evaluation.

NOTE: CPT five digit codes and/or nomenclature are copyright 1992 American Medical Association.

Table 3.2

Characteristics of the Optometry Assessment Panel

Characteristic	Assessment Panel
Practice Setting	
Owner	88 %
Employed by other professional and/or group	0
Other	8
Missing	4
Method of compensation	
Fee for service	83
Salary	13
Missing	4
Number of optometrists/physicians associated with practice	
1	38
2	25
3	17
> 3	8
Missing	12
Average number patients seen in the office per week	
< 50	4
51-99	25
100-150	59
>150	4
Missing	8
Average number patients seen in the hospital per week	
1-5	50
6-10	25
> 10	17
Missing	8

Table 3.3

Group values of intra- and total-service work, standard errors* and number of respondents: Optometry

CPT	Svc	Vignette	Work: Intra	SE	Total	SE	N
92012	*	Prev sched foll-up vis 75yo pt known cataract, surg interven	100	0.0%	125	1.0%	21
99204	a	Init eval sudden onset of loss of vision 65yo diabetic	288	2.5	360	2.8	24
99212	b	Foll-up ov est pt complain red eye w subconjunct hemorrhage	47	6.7	61	4.4	24
99203	c	Init ov 15yo pt consist complains eye irritation after swim	64	10.0	79	9.4	24
92012	d	Foll-up ov 70yo est pt chronic open angle glaucoma (not incl	145	5.8	181	5.1	24
99213	e	Foll-up ov est pt slightly elevat ocular tensions 6 mos ago,	136	5.3	173	5.7	24
99242	f	Off consult GP re:pt w eye pain; GP cannot see ocular abnorm	219	8.1	278	7.1	24
92002	g	Init off eval 10yo male allergies, itchy burn both eyes	87	10.3	114	7.9	24
99212	h	Foll-up ov pt treat for dry eye	66	9.1	85	8.2	24
92004	i	Init off eval 45yo hypertens pt blurred vision (not incl	224	4.7	269	5.6	24
92002	j	Init off eval 55yo pt blurred vision in left eye	222	6.3	267	6.0	24
99202	k	Init ov pt present sty (internal hordeolum)	77	7.2	98	8.8	24
92004	l	Init off eval 66yo pt new onset blurred vision & diplopia	312	4.8	369	4.9	24
92014	m	Off eval 74yo est pt homonymous hemianopsia (not incl	224	6.0	282	5.4	24
92012	n	Foll-up ov 60yo est cataract pt requires cont care, visual	186	4.8	228	4.8	24
99203	o	Init ov pt presents pain in one eye	238	5.6	276	6.2	24
92082	p	Interp intermed visual field exam, med diag eval, Goldmann	-	-	123	9.3	24
92225	q	Init ext ophthalmosc both eyes, med diag eval pt persist	-	-	176	8.4	24
92250	r	Ophthalmosc w med diag eval; w fundus photography	-	-	183	5.0	24
92081	s	Visual field exam, uni/bilat, med diag eval; ltd exam (eg,	-	-	104	8.6	24
92083	t	Interp ext visual field exam quant perimetry & med diag ev	-	-	168	7.7	24
92100	u	Serial tonom (sep proc) w mult measure intraocular pressure	-	-	127	11.7	23
92226	v	Ophthalmosc ext, retinal detach, med diag eval; subseq	-	-	192	8.3	24
92326	w	Replace contact lens	-	-	71	8.4	23
92353	x	Fitting of spectacle prosthesis for aphakia; multifocal	-	-	75	11.4	21
92020	y	Bilat gonioscopy, w med diag eval	-	-	151	6.9	24

*Approximate standard error as a percentage of the geometric mean

Table 3.4

Group values of intra- and total-service time, standard errors* and number of respondents: Optometry

CPT	Svc	Vignette	Time (minutes) Intra	SE	Total	SE	N
92012	*	Prev sched foll-up vis 75yo pt known cataract, surg interven	16	4.3%	23	3.4%	23
99204	a	Init eval sudden onset of loss of vision 65yo diabetic	34	4.7	46	3.8	24
99212	b	Foll-up ov est pt complain red eye w subconjunct hemorrhage	9	6.7	14	5.0	24
99203	c	Init ov 15yo pt consist complains eye irritation after swim	14	3.7	18	3.0	24
92012	d	Foll-up ov 70yo est pt chronic open angle glaucoma (not incl	19	5.5	26	5.3	24
99213	e	Foll-up ov est pt slightly elevat ocular tensions 6 mos ago,	17	4.1	23	4.8	24
99242	f	Off consult GP re:pt w eye pain; GP cannot see ocular abnorm	29	5.2	42	4.8	24
92002	g	Init off eval 10yo male allergies, itchy burn both eyes	16	5.3	21	4.1	24
99212	h	Foll-up ov pt treat for dry eye	12	4.8	15	4.5	24
92004	i	Init off eval 45yo hypertens pt blurred vision (not incl	29	6.9	38	5.8	24
92002	j	Init off eval 55yo pt blurred vision in left eye	30	4.3	37	4.1	24
99202	k	Init ov pt present sty (internal hordeolum)	13	5.1	17	4.0	24
92004	l	Init off eval 66yo pt new onset blurred vision & diplopia	36	5.1	47	4.1	24
92014	m	Off eval 74yo est pt homonymous hemianopsia (not incl	29	4.2	39	3.5	23
92012	n	Foll-up ov 60yo est cataract pt requires cont care, visual	26	5.5	35	5.0	24
99203	o	Init ov pt presents pain in one eye	27	4.4	34	4.3	24
92082	p	Interp intermed visual field exam, med diag eval, Goldmann	-	-	13	9.7	24
92225	q	Init ext ophthalmosc both eyes, med diag eval pt persist	-	-	18	6.2	24
92250	r	Ophthalmosc w med diag eval; w fundus photography	-	-	18	5.6	24
92081	s	Visual field exam, uni/bilat, med diag eval; ltd exam (eg,	-	-	14	7.7	24
92083	t	Interp ext visual field exam quant perimetry & med diag eval	-	-	15	9.0	24
92100	u	Serial tonom (sep proc) w mult measure intraocular pressure	-	-	23	8.7	23
92226	v	Ophthalmosc ext, retinal detach, med diag eval; subseq	-	-	21	6.5	24
92326	w	Replace contact lens	-	-	11	7.2	23
92353	x	Fitting of spectacle prosthesis for aphakia; multifocal	-	-	14	6.8	21
92020	y	Bilat gonioscopy, w med diag eval	-	-	16	6.8	24

*Approximate standard error as a percentage of the geometric mean

Table 3.5

Comparison of service time: Optometry and ophthalmology

CPT	Vignette	Time		
		om	op	Ratio
92012	Foll-up ov 70yo est pt chronic open angle glaucoma (not incl	19	22	1.16*
92004	Init off eval 66yo pt new onset blurred vision & diplopia	36	40	1.11*
92014	Off eval 74yo est pt homonymous hemianopsia (not incl	29	38	1.31*
92082	Interp intermed visual field exam, med diag eval, Goldmann	13	16	1.23
92225	Init ext ophthalmosc both eyes, med diag eval pt persist	18	26	1.44
92250	Ophthalmosc w med diag eval; w fundus photography	18	25	1.39
92081	Visual field exam, uni/bilat, med diag eval; ltd exam (eg,	14	27	1.93
92226	Ophthalmosc ext, retinal detach, med diag eval; subseq	21	27	1.29
92353	Fitting of spectacle prosthesis for aphakia; multifocal	14	18	1.29

*Intra-service time, remaining services are total-service time.

Note: om = optometry
op = ophthalmology
Ratio = op/om

Table 3.6

Comparison of intra and total-service time: Optometry and ophthalmology

CPT	Vignette	Time					
		Optometry			Ophthalmology		
		Intra	Total	Ratio	Intra	Total	Ratio
92012	Foll-up ov 70yo est pt chronic open angle glaucoma (not incl	19	26	.73	22	36	.61
92004	Init off eval 66yo pt new onset blurred vision & diplopia	36	47	.77	40	57	.70
92014	Off eval 74yo est pt homonymous hemianopsia (not incl	29	39	.74	38	66	.58
92082	Interp intermed visual field exam, med diag eval, Goldmann		13			16	
92225	Init ext ophthalmosc both eyes, med diag eval pt persist		18			26	
92250	Ophthalmosc w med diag eval; w fundus photography		18			25	
92081	Visual field exam, uni/bilat, med diag eval; ltd exam (eg,		14			27	
92226	Ophthalmosc ext, retinal detach, med diag eval; subseq		21			27	
92353	Fitting of spectacle prosthesis for aphakia; multifocal		14			18	

Note: Ratio = intra-time/total time

Table 3.7

Recommended illustrative vignettes for evaluation and management codes:
Optometry

CPT	Svc	Vignette	Time (minutes) Intra	SE	Total	SE
Office Visits - New Patients						
92002		Ophthalmological services: medical examination and evaluation with initiation or continuation of diagnostic and treatment program; intermediate, new patient.				
	g	Initial office evaluation of a 10-year-old male who has allergies and complains of an itchy burning sensation in both eyes.	16	5.3%	21	4.1%
92004		Ophthalmological services: medical examination and evaluation with initiation or continuation of diagnostic and treatment program; comprehensive, new patient one or more visits.				
	j	Initial office evaluation of a 55-year-old patient with blurred vision in left eye.	30	4.3	37	4.1
99202		Office/outpatient visit for the evaluation and management of a new patient, level two; approx. 20 minutes.				
	c	Initial office visit for a 15 year old patient who consistently complains of eye irritation after swimming practice.	14	3.7	18	3.0
	k	Initial office visit with a patient who presents with a sty (internal hordeolum).	13	5.1	17	4.0

Table 3.7 (continued)

Recommended illustrative vignettes for evaluation and management codes:
Optometry

CPT	Svc	Vignette	----Time (minutes)---- Intra	SE	Total	SE
Office Visits - New Patients						
99203		Office/outpatient visit for the evaluation and management of a new patient, level three; approx. 30 minutes.				
	a	Initial evaluation of a sudden onset of loss of vision in a 65-year-old diabetic.	34	4.7%	46	3.8%
	o	Initial office visit with a patient who presents with pain in one eye.	27	4.4	34	4.3
Office Visits - Established						
92012		Ophthalmological services: medical examination and evaluation with initiation or continuation of diagnostic and treatment program; intermediate, established patient.				
	*	Previously scheduled follow-up visit for a 75-year-old with a known cataract, to see if surgical intervention is needed, not requiring comprehensive service.	16	4.3	23	3.4
92014		Ophthalmological services: medical examination and evaluation with initiation or continuation of diagnostic and treatment program; comprehensive established patient, one more visits.				
	m	Office evaluation of a 74-year-old established patient with homonymous hemianopsia (not including prescription of eyeglasses).	29	4.2	39	3.5

Table 3.7 (continued)

Recommended illustrative vignettes for evaluation and management codes:
Optometry

CPT	Svc	Vignette	Time (minutes) Intra	SE	Total	SE
Office Visits - Established Patients						
99212		Office/outpatient visit for the evaluation and management of an established patient, level two; approx. 10 minutes.				
	h	Follow-up office visit with a patient who is being treated for dry eye.	12	4.8%	15	4.5%
	b	Follow-up office visit for an established patient who came in complaining of a red eye with a subconjunctival hemorrhage.	9	6.7	14	5.0
99213		Office/outpatient visit for the evaluation and management of an established patient, level three; approx. 15 minutes.				
	e	Follow-up office visit for an established patient with slightly elevated ocular tensions who, when last seen six months ago, had pressures of 22 mm Hg.	17	4.1	23	4.8
Office Consultations						
99242		Initial office consultation, level 2; approx. 30 minutes.				
	f	Office consultation for a general practitioner regarding a patient with eye pain. The general practitioner cannot see any ocular abnormality.	29	5.2	42	4.8

Table 3.8

List of surveyed services and procedures: Podiatry

CPT	Svc	Service/Procedure
99213	*	Office visit of a 48-year-old female who jammed her left toe on the corner of the couch. The nail was found to be 80 percent avulsed distally; there is local pain, swelling, and bruising.
99205	a	Initial office visit of a 38-year-old male who sustained a contusion degloving injury of the digits of the left foot with multiple phalangeal and metatarsal fractures. Lacerations of the tendons are noted together with apparent circulatory compromise.
99211	b	Office visit of a 58-year-old female for release to return to work 100 days after bunion surgery.
99201	c	Initial office visit of an out-of-town visitor who needs a prescription filled locally because she forgot her topical antifungal medication.
99203	d	Initial office visit of a 52-year-old obese male with a complaint of two-month-old heel pain in the left foot and no history of trauma.
99202	e	Initial office visit of a 67-year-old healthy female with a solitary painful callus under the fourth metatarsal head.
99204	f	Initial office visit of a 66-year-old female with gangrenous changes to the fourth and fifth toes of the right foot, ischemic changes to the dorsum of the foot, and severe local pain of five days duration.
99202	g	Initial office visit of an 18-year-old male with a right hallux contusion, subungual hematoma, and non-displaced comminuted fracture of the distal phalanx.
99203	h	Initial office visit of a 32-year-old male complaining of radiating pain in the left third intermetatarsal space when he is on his feet. The pain developed gradually over the past month.

NOTE: CPT five digit codes and/or nomenclature are copyright 1992 American Medical Association.

Table 3.8 (continued)

List of surveyed services and procedures: Podiatry

CPT	Svc	Service/Procedure
99204	i	Initial office visit of a 52-year-old female non-insulin-dependent diabetic with end-stage renal disease and diabetic anesthetic neuropath presenting with a swollen, foul-smelling left ankle wound that had been treated with oral antibiotics for two weeks without improvement.
99203	j	First visit for evaluation and counseling of a 28-year-old male runner with knee and calf pain.
99211	k	Office visit of a 30-year-old male for cast check two days after application of a below knee cast for ankle sprain.
99204	l	Initial office visit of a 45-year-old construction worker who fell from the roof of a one-story house and landed on his right heel. He has been diagnosed two days previously as having a compression fracture through the calcaneus at the level of the subtalar joint.
99201	m	Initial office visit of a 42-year-old male to remove sutures placed by the emergency room physician ten days previously for a simple, uncomplicated wound.
99205	n	Initial office visit of a 56-year-old female with gas gangrene of the left foot and lower leg,swelling of the extremity, lymph node pain, an oral temperature of 102.8 degrees, and severe local pain.
99212	o	Office visit of a 47-year-old male currently on oral antifungal medication for onychomycosis and tinea pedis.
99213	p	Office visit of an 18-year-old male who twisted his ankle during a basketball game. There is general swelling and pain. X-rays reveal a non-displaced fracture of the styloid process at the base of the fifth metatarsal on the right foot.

NOTE: CPT five digit codes and/or nomenclature are copyright 1992 American Medical Association.

Table 3.8 (continued)

List of surveyed services and procedures: Podiatry

CPT	Svc	Service/Procedure
99214	q	Office visit of a 69-year-old female complaining of pain in the right heel following a status post open reduction and internal fixation of a fracture 1-1/2 years ago in the right calcaneus. The right ankle is swollen, hot, and painful. X-rays appeared negative, but a companion bone scan and CAT scan revealed probable osteomyelitis.
99212	r	Office visit for a 65-year-old male for follow-up of a resolving first-degree ankle sprain.
99214	s	Office visit of a 58-year-old female who is on anticoagulants for a stroke suffered eight months previously. The patient fell yesterday, and has a large area of swelling and erythema of the left foot which has increased over the past 24 hours.
99215	t	Office visit of a 30-year-old male who, two days previously, fell through a glass shower door. He was treated in the emergency room for multiple deep lacerations on his left foot, ankle, and leg. The patient now has cyanosis, swelling and pain in the anterior leg and ankle and complains of pain and distal numbness in the foot and toes.
99212	u	Office visit with a 65-year-old established patient with an eruption on both feet from poison oak exposure.
99202	v	Initial office visit of a 29-year-old male with a recurrent locally painful ganglion cyst on the medial/dorsal aspect of the left foot.
99301	w	Initial visit in a skilled nursing facility with a 73-year-old female with localized skin eruption on the dorsal medial/aspect of the right foot without systematic complications (not including travel time).
99302	x	Follow-up visit in a skilled nursing facility with a 75-year-old established male patient with a trophic ulcer of the left heel (not including travel time).

NOTE: CPT five digit codes and/or nomenclature are copyright 1992 American Medical Association.

Table 3.8 (continued)
List of surveyed services and procedures: Podiatry

CPT	Svc	Service/Procedure
99303	y	Follow-up visit in a skilled nursing facility with a 80-year-old established insulin dependent female with paronychia of right great toe (not including travel time).
99311	z	Follow-up visit in a skilled nursing facility with a 70-year-old patient following a 10 day successful treatment of cellulitis of the foot (not including travel time).
99312	aa	Follow-up visit in a skilled nursing facility with a 75-year-old diabetic female with onychomycosis and a pre-ulcerative macerated legion between fourth and fifth toes (not including travel time).
99313	ab	Subsequent skilled nursing facility visit with a 76-year-old female with a secondarily infected lateral malleolar ulcer (not including travel time).
99332	ac	Home visit with an 80-year-old hypertensive male with acute paronychia of the left great toe (not including travel time).
11730	ad	Complete removal of nail plate for infected ingrown toenail.
28292	ae	Bunionectomy, Keller/McBride/Mayo type, 45 year old female, ambulatory surgery unit.
11750	af	Excision of nail and nail matrix, partial or complete, (eg, ingrown or deformed nail) for permanent removal.
11000	ag	Debridement of extensive eczematous or infected skin, up to 10% of body surface.
28285	ah	Hammertoe operation on one toe.
28296	ai	Hallux valgus (bunion) correction, with or without sesamoidectomy; with metatarsal osteotomy (eg, Mitchell, Chevron or concentric type procedures).
20600	aj	Arthrocentesis, aspiration and/or injection; small joint, bursa or ganglion cyst of toe.

NOTE: CPT five digit codes and/or nomenclature are copyright 1992 American Medical Association.

Table 3.9

Characteristics of the Podiatry Assessment Panel

Characteristic	Assessment Panel
Practice Setting	
Owner	88%
Employed by other professional and/or group	4
Other	8
Method of compensation	
Fee for service	71
Salary	17
Other	8
Missing	4
Number of podiatrists/physicians associated with practice	
1	17
2	54
3	17
> 3	4
Missing	8
Average number patients seen in the office per week	
< 50	21
51-99	29
100-150	46
>150	4
Average number patients seen in the hospital per week	
0	58
1	4
3	4
4	4
Missing	30

Table 3.10

Group values of intra- and total-service work, standard errors,* and number of respondents: Podiatry

CPT	Svc	Vignette	Work: Intra	SE	Total	SE	N
99213	*	Ov 48yo F jammed L toe. Nail 80% avuls distal; local pain,	100	0.0%	139	1.9%	24
99205	a	Init ov 38yo M contusion deglov injury digits L foot w mult	334	13.6	440	12.7	23
99211	b	Ov 58yo F release return to work 100 days after bunion surg	36	6.8	59	7.6	23
99201	c	Init ov out-of-town visitor needs prescript topical antifung	46	9.4	74	8.1	24
99203	d	Init ov 52yo obese M complain 2-mo-old heel pain L foot, no	136	7.9	179	7.8	24
99202	e	Init ov 67yo healthy F solit pain callus under 4th metatars	98	7.4	139	6.6	24
99204	f	Init ov 66yo F gangren 4th & 5th toes R foot, ischem changes	274	8.1	364	7.8	24
99202	g	Init ov 18yo M R hallux contus, subung hematom, & nondisplac	150	5.0	216	3.2	24
99203	h	Init ov 32yo M complain radiat pain L third intermetatars	130	7.1	166	6.0	24
99204	i	Init ov 52yo F non-insulin diabetic end-stg renal disease &	308	8.9	403	7.4	24
99203	j	1st vis eval & counsel 28yo M runner w knee & calf pain	152	8.2	202	7.5	24
99211	k	Ov 30yo M cast check 2 days after applic BK, ankle sprain	35	6.9	53	6.3	24
99204	l	Init ov 45yo fell from roof, landed R heel; diag compress fx	268	10.8	355	10.5	24
99201	m	Init ov 42yo M remove suture by EM MD 10 days prev simple,	62	5.5	89	6.5	24
99205	n	Init ov 56yo F gas gangrene L foot & low leg, swell extrem,	344	8.7	453	8.0	24
99212	o	Ov 47yo M oral antifungal med, onychomycosis & tinea pedis	62	5.4	86	5.4	24
99213	p	Ov 18yo M twist ankle; gen swell & pain; fx styloid process	158	9.0	222	7.3	24
99214	q	Ov 69yo F pain R heel foll status post open reduct & int fix	217	9.5	326	11.0	24
99212	r	Ov 65yo M foll-up resolv 1st-degree ankle sprain	65	5.9	92	6.7	24
99214	s	Ov 58yo F anticoag for stroke 8-mo prev; fell, swell &	159	11.8	232	10.6	24
99215	t	Ov 30yo M, 2-days prev treat ER mult deep lacerat on L foot,	273	9.9	350	6.1	24
99212	u	Ov 65yo est pt w erupt both feet from poison oak exposure	77	4.9	105	5.0	24
99202	v	Init ov 29yo M recurr local pain gang cyst med/dors L foot	111	4.1	151	6.2	23
99301	w	Init vis SNF 73yo F local skin erupt dors/med R foot wo	-	-	94	4.4	17
99302	x	Foll-up vis SNF 75yo est M pt, trophic ulcer L heel (not	-	-	110	12.3	17

*Approximate standard error as a percentage of the geometric mean

Table 3.10 (continued)

Group values of intra- and total-service work, standard errors,* and number of respondents: Podiatry

CPT	Svc	Vignette	Work				
			Intra	SE	Total	SE	N
99303	y	Foll-up vis SNF 80yo est insulin-depend F, paronychia R grt	-	-	131	9.2%	17
99311	z	Foll-up vis SNF 70yo pt foll 10-day success treat cellulitis	-	-	74	11.9	17
99312	aa	Foll-up vis SNF 75yo diabetic F onychomycosis & pre-ulcerat	-	-	117	6.1	17
99313	ab	Subseq SNF vis 76yo F secondarily infect lat malleolar ulcer	-	-	142	13.6	17
99332	ac	Home vis 80yo hypertens M acute paronychia L grt toe (not	-	-	157	8.1	19
11730	ad	Comp remov nail plate for infected ingrown toenail	113	9.0%	-	-	19
28292	ae	Bunionect Keller/McBride/Mayo type, 45yo F, amb surg unit	568	14.1	-	-	19
11750	af	Excis nail & nail matrix, part/comp, for perm remov	209	13.0	-	-	19
11000	ag	Debride extens eczema or infect skin, <10% body surface	150	17.8	-	-	19
28285	ah	Hammertoe operation on one toe	393	9.3	-	-	18
28296	ai	Hallux valgus correct w/wo sesamoidect; w metatars osteotomy	912	14.1	-	-	19
20600	aj	Arthrocentes aspirat/inject; sm joint/bursa/gang cyst toe	83	9.1	-	-	19

* Approximate standard error as a percentage of the geometric mean

Table 3.11

Group values of intra- and total-service time, standard errors,* and number of respondents: Podiatry

CPT	Svc	Vignette	Time (minutes) Intra	SE	Total	SE	N
99213	*	Ov 48yo F jammed L toe. Nail 80% avuls distal; local pain,	21	6.8%	34	6.9%	24
99205	a	Init ov 38yo M contusion deglov injury digits L foot w mult	44	9.0	68	6.0	22
99211	b	Ov 58yo F release return to work 100 days after bunion surg	8	9.9	13	8.4	24
99201	c	Init ov out-of-town visitor needs prescript topical antifung	12	5.7	19	5.7	24
99203	d	Init ov 52yo obese M complain 2-mo-old heel pain L foot, no	26	5.1	39	4.9	24
99202	e	Init ov 67yo healthy F solit pain callus under 4th metatars	22	5.2	34	5.3	24
99204	f	Init ov 66yo F gangren 4th & 5th toes R foot, ischem changes	40	5.7	60	4.5	24
99202	g	Init ov 18yo M R hallux contus, subung hematom, & nondisplac	29	5.8	44	5.0	24
99203	h	Init ov 32yo M complain radiat pain L third intermetatars	27	4.7	39	4.1	24
99204	i	Init ov 52yo F non-insulin diabetic end-stg renal disease &	44	6.5	63	3.7	24
99203	j	1st vis eval & counsel 28yo M runner w knee & calf pain	29	4.5	41	4.0	24
99211	k	Ov 30yo M cast check 2 days after applic BK, ankle sprain	7	8.3	11	5.9	24
99204	l	Init ov 45yo fell from roof, landed R heel; diag compress fx	39	5.2	59	5.0	24
99201	m	Init ov 42yo M remove suture by EM MD 10 days prev simple,	17	9.5	26	6.9	24
99205	n	Init ov 56yo F gas gangrene L foot & low leg, swell extrem,	45	8.2	68	5.6	24
99212	o	Ov 47yo M oral antifungal med, onychomycosis & tinea pedis	13	8.8	18	7.4	24
99213	p	Ov 18yo M twist ankle; gen swell & pain; fx styloid process	30	9.6	44	6.8	24
99214	q	Ov 69yo F pain R heel foll status post open reduct & int fix	33	7.3	53	6.1	24
99212	r	Ov 65yo M foll-up resolv 1st-degree ankle sprain	13	5.3	19	6.5	24
99214	s	Ov 58yo F anticoag for stroke 8-mo prev; fell, swell &	27	5.9	41	4.2	24
99215	t	Ov 30yo M, 2-days prev treat ER mult deep lacerat on L foot,	37	7.0	57	6.8	24
99212	u	Ov 65yo est pt w erupt both feet from poison oak exposure	13	5.9	20	6.2	24
99202	v	Init ov 29yo M recurr local pain gang cyst med/dors L foot	24	5.7	36	5.0	24
99301	w	Init vis SNF 73yo F local skin erupt dors/med R foot wo	-	-	22	10.9	17
99302	x	Foll-up vis SNF 75yo est M pt, trophic ulcer L heel (not	-	-	21	11.2	17

* Approximate standard error as a percentage of the geometric mean

Table 3.11 (continued)

Group values of intra- and total-service time, standard errors,* and number of respondents: Podiatry

CPT	Svc	Vignette	Time (minutes) Intra	SE	Total	SE	N
99303	y	Foll-up vis SNF 80yo est insulin-depend F, paronychia R grt	-	-	27	11.2%	17
99311	z	Foll-up vis SNF 70yo pt foll 10-day success treat cellulitis	-	-	15	6.1	17
99312	aa	Foll-up vis SNF 75yo diabetic F onychomycosis & pre-ulcerat	-	-	24	9.3	17
99313	ab	Subseq SNF vis 76yo F secondarily infect lat malleolar ulcer	-	-	25	8.9	17
99332	ac	Home vis 80yo hypertens M acute paronychia L grt toe (not	-	-	33	8.3	19
11730	ad	Comp remov nail plate for infected ingrown toenail	15	9.0%	-	-	21
28292	ae	Bunionect Keller/McBride/Mayo type, 45yo F, amb surg unit	60	5.6	-	-	21
11750	af	Excis nail & nail matrix, part/comp, for perm remov	23	8.6	-	-	21
11000	ag	Debride extens eczema or infect skin, <10% body surface	21	12.2	-	-	20
28285	ah	Hammertoe operation on one toe	33	5.2	-	-	20
28296	ai	Hallux valgus correct w/wo sesamoidect; w metatars osteotomy	75	6.8	-	-	21
20600	aj	Arthrocentes aspirat/inject; sm joint/bursa/gang cyst toe	11	6.6	-	-	21

* Approximate standard error as a percentage of the geometric mean

Table 3.12

Podiatry services compared with other specialties - time and work
(Work values for other specialty on the common scale)

CPT	SVC.	Vignette	Time			Work*		
			Podiatry Intra	Other Intra	Ratio	Podiatry Intra	Other Intra	Ratio
99203	j	1st vis eval & counsel 28yo M runner w knee	29	23	0.79	152	55	0.36
99311	z	Foll-up vis SNF 70yo pt foll 10-day success	15	16	1.07	74	42	0.57
11730	ad	Comp remov nail plate for infected ingrown	15	22	1.47	113	66	0.58
28292	ae	Bunionect Keller/McBride/Mayo type, 45yo F	60	56	0.93	568	292	0.51
11750	af	Excis nail & nail matrix, part/comp, for	23	30	1.30	209	92	0.44
28285	ah	Hammertoe operation on one toe	21	31	1.48	393	118	0.30
28296	ai	Hallux valgus correct w/wo sesamoidect;	75	90	1.20	912	448	0.49
20600	aj	Arthrocentes aspirat/inject; sm joint	11	11	1.00	83	49	0.59

*Work and time values for service z represent the total service.
Note: Ratio = other/podiatry

Table 3.13

Comparison of intra and total service time and work: Podiatry
(Work values on the podiatry scale)

CPT	Vignette	Time			Work		
		Intra	Total	Ratio	Intra	Total	Ratio
99213	Ov 48yo F jammed L toe. Nail 80% avuls distal; pain,	21	34	.62	100	139	.72
99205	Init ov 38yo M contusion deglov injury digits L foot	44	68	.65	334	440	.76
99211	Ov 58yo F release return to work 100 days after bunion	8	13	.62	36	59	.61
99201	Init ov out-of-town visitor needs prescript topical ng	12	19	.63	46	74	.62
99203	Init ov 52yo obese M complain 2-mo-old heel pain L foot	26	39	.67	136	179	.76
99202	Init ov 67yo healthy F solit pain callus under 4th	22	34	.65	98	139	.71
99204	Init ov 66yo F gangren 4th & 5th toes R foot, ischem	40	60	.67	274	364	.75
99202	Init ov 18yo M R hallux contus, subung hematom, &	29	44	.66	150	216	.69
99203	Init ov 32yo M complain radiat pain L third intermetat.	27	39	.69	130	166	.78
99204	Init ov 52yo F non-insulin diabetic end-stg renal	44	63	.70	308	403	.76
99203	1st vis eval & counsel 28yo M runner w knee & calf	29	41	.71	152	202	.75
99211	Ov 30yo M cast check 2 days after applic BK, ankle	7	11	.64	35	53	.66
99204	Init ov 45yo fell from roof, landed R heel; diag compress	39	59	.66	268	355	.75
99201	Init ov 42yo M remove suture by EM MD 10 days prev simple	17	26	.65	62	89	.70
99205	Init ov 56yo F gas gangrene L foot & low leg, swell	45	68	.66	344	453	.76
99212	Ov 47yo M oral antifungal med, onychomycosis & tinea	13	18	.72	62	86	.72
99213	Ov 18yo M twist ankle; gen swell & pain; fx styloid	30	44	.68	158	222	.71
99214	Ov 69yo F pain R heel foll status post open reduct &	33	53	.62	217	326	.67
99212	Ov 65yo M foll-up resolv 1st-degree ankle sprain	13	19	.68	65	92	.71
99214	Ov 58yo F anticoag for stroke 8-mo prev; fell, swell &	27	41	.66	159	232	.69
99215	Ov 30yo M, 2-days prev treat ER mult deep lacerat on L	37	57	.65	273	350	.78
99212	Ov 65yo est pt w erupt both feet from poison oak expos	13	20	.65	77	105	.73
99202	Init ov 29yo M recurr local pain gang cyst med/dors L	24	36	.67	111	151	.74
Average				**.66**			**.72**

Average time ratio of comparison specialties = .65
Average work ratio of comparison specialties = .74
Note: Ratio = intra/total

Table 3.14

Recommended illustrative vignettes for evaluation and management codes: Podiatry
(Work values on the common scale)

CPT	Svc	Vignette	---Time--- Intra	Total	---Work--- Intra	Total	Total Work Value for the Code*
99201		Problem-focused history, problem-focused examination, and straightforward medical decision making; problem(s) considered self-limited or minor; about 10 minutes.					
	c	Initial office visit of an out-of-town visitor who needs a prescription filled locally because she forgot her topical antifungal medication.	12	19	22	35	36
	m	Initial office visit of a 42-year-old male to remove sutures placed by the emergency room physician ten days previously for a simple, uncomplicated wound.	17	26	30	48	
99202		Office/outpatient visit for the evaluation and management of a new patient, level two; approx. 20 minutes.					
	d	Initial office visit of a 52-year-old obese male with a complaint of two-month-old heel pain in the left foot and no history of trauma.	26	39	65	85	71
	e	Initial office visit of a 67-year-old healthy female with a solitary painful callus under the fourth metatarsal head.	22	34	47	66	

*Total work value for the code is that produced in phase III of the RBRVS study.

Table 3.14 (continued)

Recommended illustrative vignettes for evaluation and management codes: Podiatry
(Work values on the common scale)

CPT	Svc	Vignette	---Time--- Intra	Total	---Work--- Intra	Total	Total Work Value for the Code*
99203		Office/outpatient visit for the evaluation and management of a new patient, level three; approx. 30 minutes.					
	g	Initial office visit of an 18-year-old male with a right hallux contusion, subungual hematoma, and nondisplaced comminuted fracture of the distal phalanx.	29	44	72	103	106
99204		Office/outpatient visit for the evaluation and management of a new patient, level four; approx. 45 minutes.					
	f	Initial office visit of a 66-year-old female with gangrenous changes to the fourth and fifth toes of the right foot, ischemic changes to the dorsum of the foot, and severe local pain of five days duration.	40	60	131	176	157
	l	Initial office visit of a 45-year-old construction worker who fell from the roof of a one-story house and landed on his right heel. He has been diagnosed two days previously as having a compression fracture through the calcaneus at the level of the subtalar joint.	39	59	128	169	

*Total work value for the code is that produced in phase III of the RBRVS study.

Table 3.14 (continued)
Recommended illustrative vignettes for evaluation and management codes: Podiatry
(Work values on the common scale)

CPT	Svc	Vignette	---Time--- Intra	Total	---Work--- Intra	Total	Total Work Value for the Code*
99205		Comprehensive history, comprehensive examination, and high-complexity medical decision making; problem(s) considered moderate to high severity; about 60 minutes.					
	i	Initial office visit of a 52-year-old female non-insulin-dependent diabetic with end-stage renal disease and diabetic anesthetic neuropathy presenting with a swollen, foul-smelling left ankle wound that had been treated with oral antibiotics for two weeks without improvement.	44	63	147	192	207
	n	Initial office visit of a 56-year-old female with gas gangrene of the left foot and lower leg, swelling of the extremity, lymph node pain, an oral temperature of 102.8 degrees, and severe local pain.	45	68	164	216	
99211		Evaluation and management of an established patient that may not require the presence of the physician; presenting problem(s) are minimal; about 5 minutes.					
	b	Office visit of a 58-year-old female for release to return to work 100 days after bunion surgery.	8	13	17	28	18
	k	Office visit of a 30-year-old male for cast check two days after application of a below knee cast for ankle sprain.	7	11	17	25	

*Total work value for the code is that produced in phase III of the RBRVS study.

Table 3.14 (continued)

Recommended illustrative vignettes for evaluation and management codes: Podiatry
(Work values on the common scale)

CPT	Svc	Vignette	---Time--- Intra	Total	---Work--- Intra	Total	Total Work Value for the Code*
99212		Office/outpatient visit for the evaluation and management of an established patient, level two; approx. 10 minutes.					
	o	Office visit of a 47-year-old male currently on oral antifungal medication for onychomycosis and tinea pedis.	13	18	30	41	36
	r	Office visit for a 65-year-old male for follow-up of a resolving first-degree ankle sprain.	13	19	31	44	
99213		Office/outpatient visit for the evaluation and management of an established patient, level three; approx. 15 minutes.					
	*	Office visit of a 48-year-old female who jammed her left toe on the corner of the couch. The nail was found to be 80 percent avulsed distally; there is local pain, swelling, and bruising.	21	34	48	66	53
	u	Office visit with a 65-year-old established patient with an eruption on both feet from poison oak exposure.	13	20	37	50	

*Total work value for the code is that produced in phase III of the RBRVS study.

Table 3.14 (continued)

Recommended illustrative vignettes for evaluation and management codes: Podiatry
(Work values on the common scale)

CPT	Svc	Vignette	---Time--- Intra	Total	---Work--- Intra	Total	Total Work Value for the Code*
99215		Comprehensive history, comprehensive examination, and high-complexity medical decision making; problem(s) considered moderate to high severity; about 40 minutes.					
	q	Office visit of a 69-year-old female complaining of pain in the right heel following a status post open reduction and internal fixation of a fracture 1-1/2 years ago in the right calcaneus. The right ankle is swollen, hot, and painful. X-rays appeared negative, but a companion bone scan and CAT scan revealed probable osteomyelitis.	33	53	104	156	136
	t	Office visit of a 30-year-old male who, two days previously, fell through a glass shower door. He was treated in the emergency room for multiple deep lacerations on his left foot, ankle, and leg. The patient now has cyanosis, swelling and pain in the anterior leg and ankle and complains of pain and distal numbness in the foot and toes.	37	57	130	167	

*Total work value for the code is that produced in phase III of the RBRVS study.

Table 3.14 (continued)

Recommended illustrative vignettes for evaluation and management codes: Podiatry
(Work values on the common scale)

CPT	Svc	Vignette	---Time--- Intra	Total	---Work--- Intra	Total	Total Work Value for the Code*
99311		Subsequent nursing facility care, per day, for the evaluation and management of a new or established patient; approx. 15 minutes.					
	x	Follow-up visit in a skilled nursing facility with a 75-year-old established male patient with a trophic ulcer of the left heel. (not including travel time)	-	21	-	52	51
99312		Subsequent nursing facility care, per day, for the evaluation and management of a new or established patient; approx. 25 minutes.					
	ab	Subsequent skilled nursing facility visit with a 76-year-old female with a secondarily infected lateral malleolar ulcer. (not including travel time)	-	25	-	68	71

*Total work value for the code is that produced in phase III of the RBRVS study.

Table 3.15

List of diagnostic, evaluative, and therapeutic services in surveys A and B: Clinical Psychology

CPT	Svc	Service/Procedure
90844[a]	*	50 minutes of psychotherapy in the office, fourth session, for a married 25-year-old male, (originally referred by his internist) suffering from the recent onset of panic attacks. (The panic attacks have not interfered with his employment, and he is responding positively to medication and psychotherapy).
99285[a]	a	Emergency room evaluation and environmental intervention on behalf of a 25-year-old man who is hearing voices which tell him to kill his mother, brought to hospital by brother after attempt to stab mother. Patient refuses hospital admission.
90880	b	Second hypnotherapy session in the office, for a 66-year-old male who smokes two packs of cigarettes a day and wants to quit smoking.
90847[a]	c	60 minutes of family psychotherapy for a couple who are having long-term marital difficulties and are considering a divorce.
90844[a]	d	50 minutes of psychotherapy for medical compliance with a diabetic diet and medication regime with a 15-year-old male with uncontrolled diabetes mellitus producing severe metabolic disturbances.
90801	e	Initial evaluation of a couple having marital difficulties to discuss treatment options.
90825[a]	f	Evaluation of testing, hospital, psychological, and agency records of a 70-year-old woman for a competency hearing.
90801	g	Second 50 minute session in the office evaluating the father of a 14-year-old girl, for a child custody evaluation for the juvenile court. (The mother and daughter will be seen separately.)

NOTE: CPT five digit codes and/or nomenclature are copyright 1992 American Medical Association.

Table 3.15 (continued)

List of diagnostic, evaluative, and therapeutic services in surveys A and B: Clinical Psychology

CPT	Svc	Service/Procedure
90825[a]	h	Review of school records, psychological testing data, and medical history of 10-year-old child whose parents and school are still unable to cope with his behavior.
90843[a]	i	25 minutes of psychotherapy in the hospital, fourth session, for an 11-year-old boy who periodically requires a seclusion room on the child unit because of repeated physically assaultive behavior toward staff.
99233[a]	j	Follow-up hospital visit for a 30-year-old female with bulimia, two days post admission for a suicide attempt.
90900	k	Biofeedback training for stress management, fourth session, for a 40-year-old male with a chronic headache, and an ulcer that is already under medical treatment.
90853[a]	l	90 minutes of a psychotherapy group meeting for patients with AIDS and their families.
90845	m	50 minutes of psychoanalysis in the office, for a 18-year-old female who recently quit college, and has been seen four times a week for the past four months for severe anxiety related to sexual issues.
90844[a]	n	50 minutes of psychotherapy in the office, second session, for a 20-year-old male with post traumatic stress disorder, and chronic complaints of insomnia, outbursts, and "flashbacks".
90844	o	50 minutes of psychotherapy in the office, eighth session, for treatment of a 16-year-old female suffering from a generalized anxiety disorder.
90843	p	25 minutes of psychotherapy on the fifth day of hospitalization, for a 24-year-old male with a year-long history of cocaine addiction and alcohol abuse, who is being detoxified.

NOTE: CPT five digit codes and/or nomenclature are copyright 1992 American Medical Association.

Table 3.15 (continued)

List of diagnostic, evaluative, and therapeutic services in surveys A and B: Clinical Psychology

CPT	Svc	Service/Procedure
99253[a]	q	Initial consultation in the pediatric ward, to assess emotional factors in a nine-year-old boy hospitalized for two months with severe asthma. The asthma remains unstable and is partially responsive to steroids and bronchodilator.
90887[a]	r	Meeting with the parents of a 20-year-old male recently diagnosed as schizophrenic, to discuss the expected course of the disease and treatment options.
90853[a]	s	A 60-minute group psychotherapy session, for six females conducted at a residential-treatment facility for adolescent females. (Do not include travel time).
90845	t	50 minutes of psychoanalysis in the office, for a 45-year-old employed male in the second year of psychoanalysis for difficulty with authority figures that interferes with his work performance.
90801[a]	u	50 minutes of initial evaluation of a 67-year-old woman, living alone, referred for mental competency evaluation for guardianship purposes by adult protective services.
90844	v	50 minutes of psychotherapy in the office, for a 45-year-old male with a five-year history of a bipolar mood disorder, who is on lithium carbonate and is seen and is seen every other week for issues related to conflict in his marriage and at work, and who reveals thoughts of killing himself during the session. (After assessment you decide to continue treatment on an outpatient basis.)
90844	w	50 minutes of psychotherapy in the hospital, for a 65-year-old female with major affective disorder with melancholia responding to medication, who is about to be discharged.

[a] service also included on Survey C.

NOTE: CPT five digit codes and/or nomenclature are copyright 1992 American Medical Association.

Table 3.15 (continued)

List of psychological assessments
in survey C: Clinical Psychology

CPT	Svc	Service/Procedure
90830	-A	Assessment of the intellectual competence of an impulsive 10-year-old boy who appears unable or unwilling to learn more than rudimentary reading and arithmetic.
90830	-A	Assessment of the presence or degree of mental retardation of a 21-year-old man who dropped out of vocational school at 14 and has remained at home ever since. Social services is already involved with the family and recommends group home placement if the patient qualifies for State services.
90830	-B	Assessment of personality and emotional functioning in a 19-year-old female with eating disorder and depression, admitted to the hospital following a suicide attempt. Patient has a history of stormy interpersonal relationships and poor compliance with psychotherapy.
90830	-B	Psychological assessment of a 45-year- old male, referred by his internist. Patient believes he was exposed to "farm chemicals" while driving in rural Iowa one month prior, and now reports "shortness of breath, shakiness, and memory impairment" when he is exposed to particular odors (household cleaning solutions, perfumes, etc.). Patient has altered his entire lifestyle, refusing to use any product he fears has "chemicals" and has moved from his house since his neighbor fertilized his lawn.
90830	-C	Evaluation and assessment of a 62-year-old male attorney, with left hemiplegia from a right cerebral vascular accident, for cognitive and emotional functioning, with emphasis on inpatient rehabilitation participation and adjustment after discharge to the community.

NOTE: CPT five digit codes and/or nomenclature are copyright 1992 American Medical Association.

Table 3.15 (continued)

List of psychological assessments
in survey C: Clinical Psychology

CPT	Svc	Service/Procedure
90830	-C	Assessment of a 42-year-old male with chronic back and shoulder pain, secondary to a crushing injury sustained two years prior at his job as an industrial mechanic. All medical inter-ventions have been explored and the patient is not a surgical candidate. Patient has been unable to work and has pending litigation against his employer. He has been self-medicating with alcohol and over-using his prescription medications. Evaluate for admission to a chronic pain treatment program.
90830	-D	Assessment of a 78-year-old woman residing in a nursing home because of a recent stroke who was referred by Probate Court to determine the least restrictive environment and whether or not guardianship is necessary.
90830	-D	Assessment of a 80-year-old divorced woman previously diagnosed with probable dementia of the Alzheimer's type was referred by her daughter as to whether it is safe for her to continue to live at home.
95880		Assessment of a 68 year-old female who is 3 months post CVA (cerebrovascular accident) in the distribution of the left middle cerebral artery. Speech and language functions are the focus of the assessment.
95880		Aphasia assessment following evacuation of a subdural hematoa caused by a fall and head trauma to a 45-year-old male college professor.
95881		Assessment of the developmental status of a 3-year-old girl with spastic diplegia, who has limited language, to determine an early intervention plan (placement in preschool for children with developmental delays).
95881		A 5-year-old boy with a history of developmental disabilities, hydrocephalus, and seizure disorder is referred to determine what supportive services are needed to allow him to remain at home.

NOTE: CPT five digit codes and/or nomenclature are copyright 1992 American Medical Association.

Table 3.15 (continued)

List of psychological assessments
in survey C: Clinical Psychology

CPT	Svc	Service/Procedure
95882		Neurobehavioral clinical evaluation of a 72-year-old, widowed white female, with relatively recent onset of gait disturbance, urinary incontinence, and severe memory impairment, seen at bedside in a medical hospital. Cysternography unremarkable for normal pressure hydrocephalus (NPH), but ventricles enlarged, as well as mild cortical atrophy. ASAP evaluation requested in effort to assess if patient appears to have a global or degenerative dementia or if more consistent with NPH, prior to shunting procedure. Patient is not ambulatory.
95882		Neurobehavioral clinical evaluation of a 45-year-old female school teacher seen at bedside in the intensive care unit of a medical hospital, fourth day status-post liver transplant. Nurses have noted episodic confusion, disorientation and increased irritability. Otherwise the patient appears to be recovering from surgery and liver functions are improving. The primary physician requests STAT assessment of neurobehavioral status to evaluate encephalopathy versus emotional factors underlying patient's symptoms. The patient is too ill for formal psychological testing procedures.
95883		Assessment of a 57-year-old male engineer with family history of Alzheimer's Disease who believes he is experiencing abnormal difficulty with word-finding, who recently became momentarily confused while driving in an unfamiliar part of town, and reports that he is having trouble keeping the details of various work projects "straight" in his mind.
95883		Assessment of a 47-year-old male who suffered a cardiac arrest two months ago. He was successfully resuscitated by paramedics and stabilized in hospital, but no CPR had been administered prior to their arrival (anoxic episode of approximately 7 minutes). He seems to be recovered physically, but his family claims he is "not the same person." They are beginning to question whether he will be able to return to work.

NOTE: CPT five digit codes and/or nomenclature are copyright 1992 American Medical Association.

Table 3.16

Characteristics of the Clinical Psychology survey samples

Characteristic	Surveys A & B	Surveys C
Total Number of Respondents	155	91
Response Rate	67%	77%
Practice Setting		
Owner	84%	74%
% ployed by other professional	5	7
and/or group	11	19
Other organization		
Method of compensation		
Fee for service	82%	79%
Salary	15	21
Other	3	0
Number of psychologists/physicians associated with the practice		
1	37%	34%
2	17	9
3	5	10
> 3	14	18
Missing	19	29
Performed formal testing in past year		
Yes	84%	81%
No	16	18
Highest Degree		
Ph.D.	94%	90%
Ed.D.	3	2
Psy.D.	4	8

Table 3.17

Group values of intra- and total-service work, standard errors,* and number of respondents, Survey A & B: Clinical Psychology

CPT	Svc	Vignette	Work				
			Intra	SE	Total	SE	N
90844	*	50 mins psythpy, 4th session, 25yo m, suffer panic	100	1.8%	120	2.1%	155
90520	a	ER eval & int 25 yo m, hearing voices	261	2.6	365	2.6	125
90880	b	Second hypnotherapy session in the office	91	2.7	111	2.8	110
90847	c	60 mins fam psythpy for a couple w marital	148	1.9	180	1.9	150
90844	d	50 mins psythpy for compliance with a diet	138	1.8	178	1.8	133
90801	e	Init eval couple having marital difficulties	144	2.4	179	2.4	150
90825	f	Eval records 70 yo woman for competency hearing	133	3.4	207	3.6	118
90801	g	2nd 50 min ses off eval, father 14 yo f child cust	154	2.0	225	2.3	136
90825	h	Rev records, psych testing, med hist 10yo	119	3.4	167	3.4	132
90843	i	25 mins of psythpy hosp, 4th ses, 11yo m	111	3.4	163	3.1	135
90280	j	FU hosp visit for a 30 yo female with bulimia	141	2.6	190	2.4	136
90900	k	Biofeedback training for stress management	93	2.4	115	2.4	95
90853	l	90 mins psythpy grp patients with AIDS	195	2.3	252	2.5	136
90845	m	50 mins psyanaly off, 18 yo f seen 4x wk for last 4	107	2.1	130	2.3	95
90844	n	50 mins psythpy off, 2nd ses, 20yo m post traum str	133	1.9	168	2.1	151
90844	o	50 mins psythpy off, 8th ses, 16 yo f gen anx disord.	102	1.7	126	1.9	137
90843	p	25 mins psythpy 5th day of hosp, 24 yo m cocaine	91	3.1	125	2.9	124
90620	q	Init cons pediatric ward, to assess 9yo boy hosp	156	2.3	217	2.6	110
90887	r	Mtg parnts 20yo m diagnos schizophrenic	128	2.6	164	2.6	143
90853	s	60 min grp psythpy ses, 6 adolescent	156	1.9	210	2.2	132
90845	t	50 mins psyanaly off 45 yo employed m, 2nd year	98	2.5	122	2.6	95
90801	u	50 mins init eval 67yo woman, living alone, referred	148	1.9	224	2.2	131
90844	v	50 mins psythpy off, 45 yo m bipol disord. lithium	177	2.5	244	2.6	150
90844	w	50 mins psythpy hosp, 65 yo f maj affect disorder	118	1.8	159	1.9	140

*Approximate standard error as a percentage of the geometric mean

Table 3.18

Group values of intra- and total-service time, standard errors,* and number of respondents, Survey A and B: Clinical Psychology

CPT	Svc	Vignette	----Time (minutes)--- Intra	SE	Total	SE	N
90844	*	50 mins psythpy, 4th session, 25yo m, suffer panic	50	0.0%	62	1.1%	155
90520	a	ER eval & int 25 yo m, hearing voices	69	2.9	121	2.5	125
90880	b	Second hypnotherapy session in the office	48	1.6	61	1.4	110
90847	c	60 mins fam psythpy for a couple w marital	60	0.0	74	1.0	150
90844	d	50 mins psythpy for compliance with a diet	50	0.0	73	1.0	133
90801	e	Init eval couple having marital difficulties	69	2.2	91	2.2	150
90825	f	Eval records 70 yo woman for competency hearing	74	2.8	115	3.3	118
90801	g	2nd 50 min ses off eval, father 14 yo f child cust	50	0.0	82	1.8	136
90825	h	Rev records, psych testing, med hist 10yo	56	2.9	81	3.7	132
90843	i	25 mins of psythpy hosp, 4th ses, 11yo m	25	0.0	50	1.7	135
90280	j	FU hosp visit for a 30 yo female with bulimia	50	1.8	72	2.0	136
90900	k	Biofeedback training for stress management	46	1.8	58	1.3	95
90853	l	90 mins psythpy grp patients with AIDS	90	0.0	122	1.2	136
90845	m	50 mins psyanaly off, 18 yo f seen 4x wk for last 4	50	0.0	61	1.1	95
90844	n	50 mins psythpy off, 2nd ses, 20yo m post traum str	50	0.0	65	1.0	151
90844	o	50 mins psythpy off, 8th ses, 16 yo f gen anx disord.	50	0.0	62	1.0	137
90843	p	25 mins psythpy 5th day of hosp, 24 yo m cocaine	25	0.0	44	1.6	124
90620	q	Init cons pediatric ward, to assess 9yo boy hosp	61	2.3	97	2.3	110
90887	r	Mtg parnts 20yo m diagnos schizophrenic	56	1.9	73	2.0	143
90853	s	60 min grp psythpy ses, 6 adolescent	60	0.0	91	1.2	132
90845	t	50 mins psyanaly off 45 yo employed m, 2nd year	50	0.0	61	1.1	95
90801	u	50 mins init eval 67yo woman, living alone, referred	50	0.0	92	1.7	131
90844	v	50 mins psythpy off, 45 yo m bipol disord. lithium	50	0.0	77	1.2	150
90844	w	50 mins psythpy hosp, 65 yo f maj affect disorder	50	0.0	73	1.1	140

* Approximate standard error as a percentage of the geometric mean

Table 3.19

Comparison of links for time and work: Clinical Psychology and Psychiatry
(work values for psychiatry are on the common scale)

CPT	Svc	Vignette	Time: Intra Psylgy	Intra Psytry	Intra Ratio	Total Psylgy	Total Psytry	Total Ratio
90844	*	50 mins psythpy, 4th session, 25yo, suffer	50	50	a	62	61	0.98
90880	b	Second hypnotherapy session in the office	48	42	0.88	61	57	0.93
90801	g	2nd 50 min ses off eval, father 14 yo f	50	50	a	82	90	1.10
90843	i	25 mins of psythpy hosp, 4th ses, 11yo m	25	25	a	50	58	1.16
90900	k	Biofeedback training for stress management	46	42	0.91	58	52	0.90
90845	m	50 mins psyanaly off, 18 yo f seen 4x wk for	50	50	a	61	59	0.99
90844	n	50 mins psythpy off, 2nd ses, 20yo m post	50	50	a	65	65	1.00
90843	p	25 mins psythpy 5th day of hosp, 24 yo m	25	25	a	44	39	0.89
90853	s	60 min grp psythpy ses, 6 adolescent	60	60	a	91	97	1.07
90845	t	50 mins psyanaly off 45 yo employed m, 2nd	50	50	a	61	58	0.95
90844	v	50 mins psythpy off, 45 yo m bipol disord.	50	50	a	77	77	1.00

a Intra-service time listed as part of the vignette.

Note: Psylgy = Psychology
Psytry = Psychiatry
Ratio = Psychiatry/Psychology

Table 3.19 (continued)

Comparison of links for time and work: Clinical Psychology and Psychiatry
(work values for psychiatry are on the common scale)

CPT	Svc	Vignette	Work					
			Intra			Total		
			Psylgy	Psytry	Ratio	Psylgy	Psytry	Ratio
90844	*	50 mins psythpy, 4th session, 25yo, suffer	100	96	0.96	120	111	0.93
90880	b	Second hypnotherapy session in the office	91	84	0.92	111	97	0.87
90801	g	2nd 50 min ses off eval, father 14 yo f	154	158	1.03	225	223	0.99
90843	i	25 mins of psythpy hosp, 4th ses, 11yo m	111	111	1.00	163	149	0.91
90900	k	Biofeedback training for stress management	93	69	0.74	115	86	0.74
90845	m	50 mins psyanaly off, 18 yo f seen 4x wk for	107	116	1.08	130	126	0.97
90844	n	50 mins psythpy off, 2nd ses, 20yo m post	133	126	0.95	168	148	0.88
90843	p	25 mins psythpy 5th day of hosp, 24 yo m	91	81	0.89	125	104	0.83
90853	s	60 min grp psythpy ses, 6 adolescent	156	182	1.17	210	231	1.10
90845	t	50 mins psyanaly off 45 yo employed m, 2nd	98	116	1.18	122	126	1.03
90844	v	50 mins psythpy off, 45 yo m bipol disord.	177	176	0.99	244	226	0.93

Note: Psylgy = Psychology
Psytry = Psychiatry
Ratio = Psychiatry/Psychology

Table 3.20

Testing whether the ratings of the work of diagnostic, evaluative, and therapeutic services are the same for panels A and B, and C (work values shown on the psychology scale)

CPT	Panels A	B	C	Vignette	Intra-work AB	C	DIFF	Value	Total-work AB	C	DIFF	Value
90844	*	*	*	50 minutes of psychotherapy in the office, fourth session, for a married 25-year-old male,(originally referred by his internist) suffering from the recent onset of panic attacks. (The panic attacks have not interfered with his employment, and he is responding positively to medication and psychotherapy.	100	100	0	0.0	120	122	-2	-0.5
99285	a	a	a	Emergency room evaluation and environmental intervention on behalf of a 25-year-old man who is hearing voices which tell him to kill his mother, brought to hospital by brother after attempt to stab his mother. Patient refuses hospital admission.	261	241	20	1.2	365	357	8	0.3
90847	c	c	b	60 minutes of family psychotherapy for a couple who are having long-term marital difficulties and are considering a divorce.	148	138	10	1.8	180	167	13	1.9

Table 3.20 (continued)

Testing whether the ratings of the work of diagnostic, evaluative, and therapeutic services are the same for panels A and B, and C (work values shown on the psychology scale)

CPT	Panels A	B	C	Vignette	Intra-work AB	C	DIFF	Value	Total-work AB	C	DIFF	Value
90844	d	d	c	50 minutes of psychotherapy for medical compliance with a diabetic diet and medication regime with a 15-year-old male with uncontrolled diabetes mellitus producing severe metabolic disturbances.	138	135	3	0.6	178	179	1	-0.2
90825	f	f	d	Evaluation of testing, hospital, psychological, and agency records of a 70-year-old woman for a competency hearing.	134	137	-3	-0.3	207	200	8	0.5
90825	h	h	e	Review of school records, psychological testing data, and medical history of 10 year old child whose parents and school are still unable to cope with his behavior.	119	115	4	0.5	167	170	-3	-0.3
90843	i	i	f	25 minutes of psychotherapy in the hospital, fourth session, for an 11-year-old boy who periodically requires a seclusion room on the child unit because of repeated physically assaultive behavior toward staff.	111	103	8	1.1	163	151	12	1.1

Table 3.20 (continued)

Testing whether the ratings of the work of diagnostic, evaluative, and therapeutic services are the same for panels A and B, and C (work values shown on the psychology scale)

CPT	Panels A	B	C	Vignette	Intra-work AB	C	DIFF	Value	Total-work AB	C	DIFF	Value
99233	j	j	g	Follow-up hospital visit for a 30-year-old female with bulimia, two days post admission for a suicide attempt.	141	143	-2	-0.2	190	199	-9	-0.8
90853	l	l	h	90 minutes of a psychotherapy group meeting for patients with AIDS and their families.	195	198	-3	-0.3	252	259	-7	-0.5
90844	n	n	i	50 minutes of psychotherapy in the office, second session, for a 20-year-old male with post traumatic stress disorder, and chronic complaints of insomnia, outbursts and "flashbacks."	133	123	10	2.4*	168	154	14	2.1*
99253	q	q	j	Initial consultation in the pediatric ward, to assess emotional factors in a nine-year-old boy hospitalized for two months with severe asthma. The asthma remains unstable and is partially responsive to steroids and bronchodilator.	156	156	0	0.0	217	213	4	0.3

*Difference between AB and C is significant at the 5% level.

Table 3.20 (continued)

Testing whether the ratings of the work of diagnostic, evaluative, and therapeutic services are the same for panels A and B, and C (work values shown on the psychology scale)

CPT	Panels A	B	C	Vignette	Intra-work AB	C	DIFF	Value	Total-work AB	C	DIFF	Value
90887	r	r	k	Meeting with the parents of a 20-year-old male recently diagnosed as schizophrenic, to discuss the expected course of the disease and treatment options.	128	120	7	1.2	164	156	9	1.1
90853	s	s	l	A 60-minute group psychotherapy session, for six females conducted at a residential-treatment facility for adolescent females.	156	150	6	1.0	210	200	10	1.0
90801	u	u	m	50 minutes of initial evaluation of a 67-year-old woman, living alone, referred for mental competency evaluation for guardianship purposes by adult protective services.	148	136	12	1.8	224	198	26	2.2*

*Difference between AB and C is significant at the 5% level.

Table 3.21
Intra- and total work (on the common scale) and time, standard errors,* ratio,** and number of respondents: Survey C psychological assessments

CPT	Svc	Description	--Time in minutes-- Intra	Total	Ratio	-------Work-------- Intra	Total	Ratio	N
90830-A	n	Assessment of the intellectual competence of an impulsive 10-year-old boy who appears unable or unwilling to learn more than rudimentary reading and arithmetic.	120 (3.7%)	218 (3.8%)	0.55	194 (5.0%)	302 (5.8%)	0.64	74
90830-A	v	Assessment of the presence or degree of mental retardation of a 21-year-old man who dropped out of vocational school at 14 and has remained at home ever since. Social services is already involved with the family and recommends group home placement if the patient qualifies for State services.	111 (3.2)	188 (3.4)	0.59	176 (4.8)	266 (5.7)	0.66	80
90830-B	o	Assessment of personality and emotional functioning in a 19-year-old female with eating disorder and depression, admitted to the hospital following a suicide attempt. Patient has a history of stormy interpersonal relationships and poor compliance with psychotherapy.	127 (3.4)	253 (3.4)	0.50	239 (5.0)	387 (6.6)	0.62	80

* Approximate standard error as a percentage of the geometric mean
** Ratio = intra/total

Table 3.21 (continued)
Intra- and total work (on the common scale) and time, standard errors,* ratio,** and number of respondents: Survey C psychological assessments

CPT	Svc	Description	--Time in minutes-- Intra	Total	Ratio	-------Work-------- Intra	Total	Ratio	N
90830-B	w	Psychological assessment of a 45-year-old male, referred by his internist. Patient believes he was exposed to "farm chemicals" while driving in rural Iowa one month prior, and now reports "shortness of breath, shakiness, and memory impairment" when he is exposed to particular odors (household cleaning solutions, perfumes, etc.). Patient has altered his entire lifestyle, refusing to use any product he fears has "chemicals" and has moved from his house since his neighbor fertilized his lawn.	170 (3.4%)	297 (3.6%)	0.57	260 (6.3%)	415 (7.4%)	0.63	81
90830-C	p	Evaluation and assessment of a 62-year-old male attorney, with left hemiplegia from a right cerebral vascular accident, for cognitive and emotional functioning, with emphasis on inpatient rehabilitation participation and adjustment after discharge to the community.	206 (3.4)	339 (3.1)	0.61	277 (7.6)	403 (9.5)	0.69	58

* Approximate standard error as a percentage of the geometric mean
** Ratio = intra/total

Table 3.21 (continued)
Intra- and total work (on the common scale) and time, standard errors,* ratio,** and number of respondents: Survey C psychological assessments

CPT	Svc	Description	--Time in minutes-- Intra	Total	Ratio	-------Work-------- Intra	Total	Ratio	N
90830-C	x	Assessment of a 42-year-old male with chronic back and shoulder pain, secondary to a crushing injury sustained two years prior at his job as an industrial mechanic. All medical interventions have been explored and the patient is not a surgical candidate. Patient has been unable to work and has pending litigation against his employer. He has been self-medicating with alcohol and over-using his prescription medications. Evaluate for admission to a chronic pain treatment program.	110 (5.1%)	209 (4.7%)	0.53	209 (6.3%)	326 (7.0%)	0.64	71
90830-D	q	Assessment of a 78-year-old woman residing in a nursing home because of a recent stroke who was referred by Probate Court to determine the least restrictive environment and whether or not guardianship is necessary.	115 (3.9)	217 (3.9)	0.53	193 (6.8)	315 (7.5)	0.61	68
90830-D	y	Assessment of a 80-year-old divorced woman previously diagnosed with probable dementia of the Alzheimer's type was referred by her daughter as to whether it is safe for her to continue to live at home.	117 (3.5)	213 (3.8)	0.55	194 (6.2)	310 (7.2)	0.63	67

* Approximate standard error as a percentage of the geometric mean
** Ratio = intra/total

Table 3.21 (continued)
Intra- and total work (on the common scale) and time, standard errors,* ratio,** and number of respondents: Survey C psychological assessments

CPT	Svc	Description	--Time in minutes-- Intra	Total	Ratio	-------Work-------- Intra	Total	Ratio	N
95880	u	Assessment of a 68 year-old female who is 3 months post CVA (cerebrovascular accident) in the distribution of the left middle cerebral artery. Speech and language functions are the focus of the assessment.	124 (3.8%)	226 (4.3%)	0.55	218 (7.2%)	343 (8.0%)	0.69	50
95880	ac	Aphasia assessment following evacuation of a subdural hematoma caused by a fall and head trauma to a 45-year-old male college professor.	115 (4.2)	197 (5.0)	0.58	202 (8.5)	312 (8.4)	0.65	50
95881	r	Assessment of the developmental status of a 3-year-old girl with spastic diplegia, who has limited language, to determine an early intervention plan (placement in preschool for children with developmental delays).	92 (4.0)	204 (4.0)	0.45	185 (7.9)	296 (9.4)	0.63	35
95881	z	A 5-year-old boy with a history of developmental disabilities, hydrocephalus, and seizure disorder is referred to determine what supportive services are needed to allow him to remain at home.	101 (3.7)	208 (3.3)	0.49	189 (8.5)	306 (8.8)	0.62	42

* Approximate standard error as a percentage of the geometric mean
** Ratio = intra/total

Table 3.21 (continued)
Intra- and total work (on the common scale) and time, standard errors,* ratio,** and number of respondents: Survey C psychological assessments

CPT	Svc	Description	--Time in minutes-- Intra	Total	Ratio	-------Work-------- Intra	Total	Ratio	N
95882	s	Neurobehavioral clinical evaluation of a 72-year-old, widowed white female, with relatively recent onset of gait disturbance, urinary incontinence, and severe memory impairment, seen at bedside in a medical hospital. Cysternography unremarkable for normal pressure hydrocephalus (NPH), but ventricles enlarged, as well as mild cortical atrophy. ASAP evaluation requested in effort to assess if patient appears to have a global or degenerative dementia or if more consistent with NPH, prior to shunting procedure. Patient is not ambulatory.	127 (5.0%)	206 (4.8%)	0.62	254 (8.2%)	367 (9.1%)	0.69	42
95882	aa	Neurobehavioral clinical evaluation of a 45-year-old female school teacher seen at bedside in the intensive care unit of a medical hospital, fourth day status-post liver transplant. Nurses have noted episodic confusion, disorientation and increased irritability. Otherwise the patient appears to be recovering from surgery and liver functions are improving. The primary physician requests STAT assessment of neurobehavioral status to evaluate encephalopathy versus emotional factors underlying patient's symptoms. The patient is too ill for formal psychological psychological testing procedures.	60 (3.3)	128 (2.9)	0.47	186 (7.0)	291 (7.3)	0.64	50

* Approximate standard error as a percentage of the geometric mean
** Ratio = intra/total

Table 3.21 (continued)
Intra- and total work (on the common scale) and time, standard errors,* ratio** and number of respondents: Survey C psychological assessments

CPT	Svc	Description	--Time in minutes-- Intra	Total	Ratio	-------Work-------- Intra	Total	Ratio	N
95883	t	Assessment of a 57-year-old male engineer with family history of Alzheimer's Disease who believes he is experiencing abnormal difficulty with word-finding, who recently became momentarily confused while driving in an unfamiliar part of town, and reports that he is having trouble keeping the details of various work projects "straight" in his mind.	179 (3.7%)	295 (4.0%)	0.61	268 (6.9%)	405 (8.3%)	0.66	66
95883	ab	Assessment of a 47-year-old male who suffered a cardiac arrest two months ago. He was successfully resuscitated by paramedics and stabilized in hospital, but no CPR had been administered prior to their arrival (anoxic episode of approximately 7 minutes). He seems to be recovered physically, but his family claims he is "not the same person". They are beginning to question whether he will be able to return to work.	198 (3.2)	328 (3.1)	0.60	300 (7275	429 (8.0)	0.64	70

* Approximate standard error as a percentage of the geometric mean
** Ratio = intra/total

Table 3.22
Estimated work values for assessment codes by
panel C: Clinical psychology
(on the common scale of work)

CPT	Svc	Vignette	Total work per hour*
90830		**Psychological testing by physician, with written report, per hour.**	
90830-A	n	Assessment of the intellectual competence of an impulsive 10-year-old boy who appears unable or unwilling to learn more than rudimentary reading and arithmetic.	84
90830-A	v	Assessment of the presence or degree of mental retardation of a 21-year-old man who dropped out of vocational school at 14 and has remained at home ever since.	85
90830-B	o	Assessment of personality and emotional functioning in a 19-year-old female with eating disroder and depression, admitted to the hospital following a suicide attempt.	92
90830-B	w	Psychological assessment of a 45-year-old male, referred by his internist. Patient believes he was exposed to "farm chemicals" while driving in rural Iowa one month prior.	85
90830-C	p	Evaluation and assessment of a 62-year-old male attorney, with left hemiplegia from a right cerebral vascular accident, for cognitive and emotional functioning.	72
90830-C	x	Assessment of a 42-year-old male with chronic back and shoulder pain, secondary to a crushing injury sustained two years prior at his job as an industrial mechanic.	95
90830-D	q	Assessment of a 78-year-old woman residing in a nursing home because of a recent stroke who was referred by Probate Court to determine the least restrictive environment.	87
90830-D	y	Assessment of a 80-year-old divorced woman previously diagnosed with probable dementia of the Alzheimer's type.	87
90830		**Average total work per hour**	**86**

Table 3.22 (continued)
Estimated work values for assessment codes by
panel C: Clinical psychology
(on the common scale of work)

CPT	Svc	Vignette	Total work per hour*
95880		**Assessment of higher cerebral functioning with medical interpretation; aphasia testing.**	
95880	u	Assessment of a 68 year-old female who is 3 months post CVA (cerebrovascular accident) in the distribution of the left middle cerebral artery. Speech and language...	92
95880	ac	Aphasia assessment following evacuation of a subdural hematoma caused by a fall and head trauma to a 45-year-old male college professor.	96
95880		**Average total work per hour**	**94**
95881		**Assessment of higher cerebral functioning with medical interpretation; developmental testing.**	
95881	r	Assessment of the developmental status of a 3-year-old girl with spastic diplegia, who has limited language, to determine an early intervention plan.	87
95881	z	5-year-old boy with history of developmental disabilities, hydrocephalus, and seizure disorder is referred to determine what supportive services are needed to allow him to remain at home.	89
95881		**Average total work per hour**	**88**

Table 3.22 (continued)
Estimated work values for assessment codes by
panel C: Clinical psychology
(on the common scale of work)

CPT	Svc	Vignette	Total work per hour*
95882		**Assessment of higher cerebral functioning with medical interpretation; cognitive testing.**	
95882	s	Neurobehavioral clinical evaluation of a 72-year-old, widowed white female, with recent onset of gait disturbance, urinary incontinence, and severe memory impairment.	107
95882	aa	Neurobehavioral clinical evaluation of a 45-year-old female school teacher seen at bedside in the intensive care unit of a medical hospital, fourth day status-post liver transplant.	137
95882		**Average total work per hour**	**127**
95883		**Neuropsychological testing battery (e.g. Halstead-Reitan, LURIA, WAIS-R) with report, per hour.**	
95883	t	Assessment of a 57-year-old male engineer with family history of Alzheimer's Disease who believes he is experiencing abnormal difficulty with word-finding.	83
95883	ab	Assessment of a 47-year-old male who suffered a cardiac arrest two months ago. He was successfully resuscitated by paramedics and stabilized in hospital.	79
95883		**Average total work per hour**	**81**

Note: the letters to the right of the 90830 CPT code in this table define subcategories within the code and can be interpreted as follows:
(A) intellectual function achievement;
(B) personality/psychopathology;
(C) behavioural medicine/rehabilitation; and
(D) adaptive functional assessments.

Table 3.23
Testing for differences in work per hour
psychological assessments: Clinical psychology

CPT	Description	Comparison Code(s)	Test Type	Value	Signific
90830	Psychological Testing	90830A-	F-Test*		
	Intra-work/hour	90830D	f-stat**	1.51	p=0.21
	Total work/hour		f-stat	2.08	p=0.11
90830	Psychological Testing	95880-95883	T-test***		
	Intra-work/hour		t-stat	6.48	p<0.001
	Total work/hour		t-stat	5.59	p<0.001
95882	Assess cognitive function	90830, 95880,	T-test***		
	Intra-work/hour	95881, 95883	t-stat	9.33	p<0.001
	Total work/hour		t-stat	11.30	p<0.001

*ANOVA is analysis of variance, testing for differences in work per hour between four divisions of 90830 suggested by the TCG.

**Measuring the significance of dividing 90830 into four groups.

***T-test measures the significance in the difference in means of work per hour.

Table 3.24
Values of work per hour for assessments
under three different scenarios: Clinical psychology

CPT	Scenario: Intra-Service Work as Intense as 90844*	90801	1.2*90844
90830	107	143	128
95880	108	144	130
95881	104	139	125
95882	158	211	190
95883	110	147	132

Key

CPT 90830: Psychological testing by physician, with written report, per hour.

95880: Assessment of higher cerebral functioning with medical interpretation; aphasia testing.

95881: Assessment of higher cerebral functioning with medical interpretation; developmental testing.

95882: Assessment of higher cerebral functioning with medical interpretation; cognitive testing.

95883: Neuropsychological testing battery (e.g. Halstead-Reitan, LURIA, WAIS-R) with report, per hour.

*Work per hour for CPT 90844 is 128; the ratio between intra-service and total time is 0.82.

Chapter 4

Task II: Validation of Reference Procedures and Elaboration and Validation of the Inputs to the Relative Work Values for the Procedures in the HCFA Reference Set

4.1 Introduction

As part of the effort to update the Medicare Fee Schedule (MFS), HCFA has emphasized the importance of identifying a set of benchmark services that medical specialties and other professions can use to review the RBRVS and request adjustments in work values. These "reference" services should include procedures that are most frequently performed in each specialty and for which the data on work and time are believed to be most reliable and valid. They should also span the range of work and include evaluation and management (E/M) services, invasive procedures, pathology, and radiology services.

The objective of this task is to provide the appropriate data to validate the work and time values for a possible set of reference services. These data can also be used by HCFA and others as a context within which to review existing work values for procedures or for recommendations on work values for new or revised CPT codes.

We identified five different sub-tasks that comprise this task:

1. Develop a list of reference procedures for each specialty;
2. Provide detailed information on the components of work for the surgical procedures on each reference list;
3. Validate the time estimates for the components of work of reference surgical procedures;

4. Provide detailed information on the components of work of non-surgical reference services; and

5. Prepare a fact sheet summarizing relevant information for all reference services.

We developed a list of 15 to 35 reference services for each specialty. To do this, we first identified the most common procedures provided by each specialty. We then selected procedures from those that covered the range of work values and included E/M, invasive, pathology, and radiology services. Finally, we identified services whose work and time values had statistical reliability, or reproducibility, and services for which there was consensus that the work and time data were valid.

We constructed a data file with detailed time information on the surgical reference services. These data included estimates of six components of surgical time: pre-service time before entry into the operating room, immediate pre- and post-operative time, intra-service time, other same-day post-operative time, and hospital and office post-operative time. For each component, the data included the mean value, the standard error of the mean, the source of the information, and the number of respondents who provided data for each calculation.

We validated the estimates of time for the surgical reference services using objective data and subjective estimates from other studies. We also conducted a systematic review process using the RBRVS assessment panelists. In general, comparisons with other data suggest that the surgical time

estimates had validity. To a large extent, the assessment panelists agreed with the values we had previously obtained.

For non-surgical reference services, we assembled a detailed data file including estimates of intra- and total-service time. We included for each service the mean value, the standard error of the mean, the source of information, and the number of respondents who provided data for each calculation.

Finally, we prepared a fact sheet summarizing relevant information for all reference services. These data included the mean time values for each of the components of work.

This chapter describes the methods, data and results of our investigation. We first describe the process used to construct reference lists for each specialty, followed by a description of the time estimates obtained for reference services and their validation. Finally, we present a fact sheet summarizing the results.

4.2 The Development of Specialty Reference Sets

The development of a list of reference procedures is an integral step in the ongoing review and refinement of the RBRVS. The reference services both anchor the scale and define its range. Work and time values for these procedures provide a context within which specialties and others can comment on the work relative values for existing services and estimate the work of new and revised CPT codes. Thus, it is important that the reference services be both well understood and that the work and

time values for these services be as valid and reliable as possible.

At the beginning of this study, HCFA had identified a reference set of 165 procedures. This set included services from all specialties and spanned the full range of physicians' work. HCFA restricted the set to include only those services for which they had the greatest confidence about the accuracy of the work values assigned.

The initial objective of this study was to develop and validate service time values for HCFA's original reference set. However, as the study progressed, HCFA decreased the number of services on the reference set. This was the result of continuing comments by specialty societies and other professionals about the validity of the work values for selected reference services. Eventually the reference set included only 112 services.

As a result of the instability of the HCFA reference set, we proposed to develop a significantly expanded set of reference services for our study. In this way, HCFA would have a larger number of services available from which to choose a final reference set. HCFA agreed on the need for a larger set and we proceeded with this approach.

4.2.1 Structure and Critieria for a Reference List

Before constructing a reference list, we first established a hierarchical structure for such a list and criteria for selecting reference services. We identified three levels of reference

lists that differ by specificity.[1] The highest level is the cross-specialty reference list that includes services and work values for all relevant specialties. The second level comprises the specialty specific reference list that describes the scale of work within a specialty. Finally, the sub-specialty reference list provides greater detail within a specialty when the specialty specific lists are not adequate. All services for a specialty on the cross-specialty list should also be present on the specialty specific list. Similarly, all (or most) services for a specialty list should also be present on the subspecialty list.

The reference lists for each of these three levels should meet some general criteria:

- each one spans the relevant work and clinical range -- this criterion requires the inclusion of services of varying work and covering all of the major service types relevant to a level;
- validity of work values -- the work values of services in the list should be "stable." That is, the values should have been sufficiently reviewed and either weathered the review process or been appropriately revised;
- statistical reliability -- the work values of services should be measured with precision and have sufficient analytical reproducibility; and

- o common services -- reference services should be selected so that the appropriate physician population is knowledgable about them.

HCFA's ultimate objective is to develop the first level reference set described above: a cross-specialty reference list. However, since the process to be used to select services for such a list and the services to be included, are uncertain at this time, we focused our investigation on specialty-specific reference sets. These lists will provide HCFA with a broad range from which to select the cross-specialty reference services. Given the level of specificity and number of services required, we did not explore development of sub-specialty reference sets.

4.2.2 Data for Selecting Specialty Reference Lists

We created a data file for selecting specialty reference services and merged three types of information. First, we identified the most common services in each specialty, using claims frequency data. These data included the national Medicare Part B summary for 1989[2] and the national summary of surgical claims published by the Health Insurance Association of America (HIAA) for the same year.[3] Second, as one measure of statistical reliability, we included the standard errors and number of survey responses for the estimates of intra-, pre-/post-, and total work and time for each service from earlier phases of the Harvard RBRVS study.[4,5,6] Third, as an indicator of the stability or validity of the work and time values, as well

as the potential acceptability of the reference services to physicians, we merged three sets of information:

a. The HCFA Reference Lists -- In selecting its initial reference list (the "primary HCFA list"), HCFA identified services for which they believed the work values were most accurate and reliable. HCFA also identified a second set of services (the "secondary HCFA list") as potential candidates for an expanded reference list.

b. The AMA RUC Reference List -- The American Medical Association (AMA), as part of its Relative Value Update Committee (RUC) Process, constructed specialty reference lists for use in developing work values for new or revised CPT codes.[7] The AMA obtained input from the specialty societies to construct these lists and used similar criteria to those described above to select reference services. We used the AMA list updated as of November, 1992.

c. Work Values Undergoing Revision -- Based on comments from specialty societies and individuals, and input from its Carrier Medical Director (CMD) process,[8] HCFA has revised some of the work values that we produced in phase III. We carefully scrutinized those services chosen for the reference lists whose work values were significantly revised.

4.2.3 Methods for Selecting Reference Services

We selected specialty reference services using a multi-step process. In the three initial steps, we did not exclude any

service that was either on the HCFA primary list or on the AMA RUC specialty list. However, a small number of these services were excluded later. The steps were as follows:

1. We excluded all non-physician services, as designated by the 1993 MFS;

2. We excluded all infrequently performed services. We defined 'infrequently performed services' as having a combined BMAD and HIAA frequency of 1,000 claims or fewer;

3. Based on survey data from the RBRVS study, for specialties with a large number of potential reference services, we excluded all services whose standard error of intra-service work was greater than 20 percent of the mean and all services with fewer than ten survey respondents;

4. We reviewed the data and selected services to provide a "dense" scale of work. That is, the intervals of work between the reference services were sufficient to provide useful benchmarks for assessing services of varying work amounts. When more than one service within a narrow work range was available, we gave preference to HCFA primary reference services, AMA RUC reference services, services with small standard errors for estimates of work, or services with large claims frequencies. Services where HCFA had revised significantly the earlier Harvard study results were more carefully scrutinized;

5. We reviewed the data to be sure a sufficient number of E/M services were available for each specialty. When necessary,

we analyzed BMAD claims data by specialty and added E/M services with the highest volume;

6. We reviewed the data to be sure the most commonly performed services were included for each specialty. If a service from the top fifteen services, as defined by BMAD payments, for a specialty was missing, it was considered as a candidate for the reference list; and,

7. We reviewed the data one final time. For specialties which continued to have a large number of services, we excluded services using the criteria in Steps 3 and 4 until 15-35 services remained.

4.2.4 Specialty Reference Lists: Results

We selected 15 to 35 reference services for eighteen specialties. We chose specialties based on their financial importance to Medicare, whether they were included in Tasks III and IV of the current study, and availability of data from which to select services. The eighteen specialties are: cardiology, dermatology, gastroenterology, general and family practice, general surgery, internal medicine, oral and maxillofacial surgery, neurosurgery, obstetrics and gynecology, ophthalmology, orthopedics, otolaryngology, pathology, plastic surgery, psychiatry, radiology, cardiothoracic surgery, and urology. The reference lists for these specialties include many of the services that would also be references for the excluded specialties.

Table 4.1 presents the reference lists, organized by specialty and in descending order of total work. The table includes a description of the service, an indicator of whether the service was included on the HCFA or AMA RUC reference lists, the total work value from the 1993 MFS (on the Harvard common scale of work), an indicator of whether the 1993 MFS work value differs significantly from the original Harvard work value, the surveyed standard error of intra-service work from the Harvard study, the number of physicians surveyed, and the Medicare Part B and HIAA claims frequencies for the service. Appendix C.1 presents a combined reference list for these specialties, sorted by CPT code.

4.3 Detailed Time Data on the Components of Surgical Work

We constructed a detailed data file including time estimates for each of the components of work for the surgical reference services. As requested by HCFA, we defined the six components of time:

1. Pre-operative time before entry into the O.R. -- the amount of time spent by the surgeon on the day before and day of a procedure, up to admission to the operating room;

2. Immediate pre- and post-operative time -- the amount of time spent by the surgeon from the admission to the operating room to the skin incision or beginning of the procedure, plus the time from skin closure until the patient leaves the operating room;

3. Intra-operative time -- the time spent by the surgeon performing the procedure itself (i.e. skin to skin time for incisional services);

4. Other same-day post-operative time -- the amount of time spent by the surgeon after the patient leaves the recovery room on the day of the procedure. These data include the number, duration, and type of post-operative visits to the patient during this period;

5. Hospital post-operative time -- the amount of time spent by the surgeon for in-hospital post-operative care after the day of the procedure. These data include the number, duration, and type of post-operative visits to the patient during this period; and,

6. Office post-operative time -- the amount of time spent by the surgeon for post-operative care in the office after the day of the procedure. These data will include the number, duration, and type of post-operative visits to the patient during this period.

We used the global surgical definition for each service as designated in the 1993 MFS to define the total-service period. For major surgery, this includes all pre-operative services provided by the surgeon beginning the day before surgery, intra-operative services that are normally a usual and neccessary part of the procedure, and all post-operative services within 90 days following the procedure. For minor surgery and non-incisional procedures, a shorter post-operative period is used, ranging from

zero to 10 days. For each of the time estimates for the surgical components, we included data on the mean value, the standard error of the mean, the source of the information, and the number of respondents who provided data for each calculation.

We had previously obtained much of the data to be provided in this task. Data already collected included estimates of time and number of visits for the components of all surgical procedures in the RBRVS study. However, some of the data needed to be reorganized to be consistent with the six components above. For example, our earlier estimates of same-day post-operative time included all post-operative care provided by the surgeon from skin closure, or procedure end, to the end of the day of the service. However, the data HCFA requested for this component required that time be subdivided into immediate post-operative time (until the patient leaves the recovery room) and other same day post-operative time. A similar situation existed for immediate pre-operative time.

4.3.1 Surveys of Immediate Pre- and Post- and Same-Day Post-Operative Time for Surgical Reference Services

To provide time data in the format described above, we collected additional data on immediate pre-operative, immediate post-operative, and other same day post-operative time. We conducted surveys of the Harvard RBRVS Assessment Panels for all of the major specialties where these time components were relevant (ie, surgical specialties that primarily perform

hospital procedures). These specialties included cardiothoracic surgery, general surgery, neurosurgery, obstetrics and gynecology, ophthalmology, oral and maxillofacial surgery, orthopedic surgery, otolaryngology, and urology. For oral and maxillofacial surgery, since little data on surgical time were available from the previous study, we surveyed the time required for each of the six components.

In developing the surveys, we defined the surgical components using the above definitions. Since they describe discrete time periods, we separated immediate pre- and immediate post-operative time and then summed the estimates to compute total immediate pre- and post-operative time for the final data set. The survey instruments and instructions are presented in Appendix F (cycle 1, section B for each specialty).

4.3.2 Immediate Pre- and Post- and Same-Day Post-Operative Time Estimates for Unsurveyed Surgical Reference Services

For a small number of surgical reference services, primarily in the specialties of cardiology and plastic surgery, we had not obtained estimates of immediate pre- and post- and same-day post-operative time in the format described above. We excluded these specialties from these tasks due to the small number of services involved.

For these surgical services, we used a predictive regression model to assign time. We estimated two separate regressions, one for total immediate pre- and post-operative time and one for

other same-day post-operative time (number of visits multiplied by time per visit). As explanatory variables for the model, we used intra-service time, whether the service required a hospital stay or an ICU stay, and the number of post-operative office visits. As input data for the regressions, we used all available estimates for the services and specialties we surveyed for immediate pre- and post-op and later same day post-op time. Using the estimated parameters for these regressions, we predicted time values for the relevant services in unsurveyed specialties.

4.3.3 Detailed Time Data Set for Surgical Reference Services: Results

Tables 4.2 and 4.3 present the survey results for immediate pre-, immediate post-, and other same-day post-operative time. The tables include the mean, the standard error of the mean, and the number of respondents who provided ratings. The tables are organized by specialty and sorted by CPT code. As shown, the amount of immediate pre- and post-operative time required is substantial for some services. The number of other same-day post-operative visits can range from less than one to two. The survey results for the other components of work for the reference services in oral and maxillofacial surgery can be found in Tables 4.4 through 4.8.

Table 4.9 presents the results for the predictive regression models for immediate pre-/post- and other same day time. The

results include estimated coefficients, R-squared, root mean square error, and the number of observations included in each regression. As shown in the table, for both regressions, almost all the regressors are significant predictors of the dependent variable. The R-squares are 0.73 and 0.68 for the immediate pre-/post- and later same day specifications, respectively.

We used the regression results and estimates of the explanatory variables to predict pre- and post-service times for all unsurveyed services. These estimates are included in the final data set.

Table 4.10 presents the final data for selected surgical reference procedures. The data are displayed in the format described above and include for each component, the mean, standard error, the number of respondents, and the source of the data. We also include the number of visits associated with the same day, hospital, and office post-operative periods and their duration.* We rounded all visit estimates to the nearest 0.5 visits and all visit durations to the nearest 5 minutes to facilitate presentation. Due to the size of the table, the data elements for all surgical reference services are not presented in this report, but are included as a computer disk file submitted with the report.

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*Later same day post- visits were not assigned to office procedures. For these procedures, the estimates of immediate pre-service and same day post-service time from phase III were used for immediate pre-/post- time for this study.

4.4 Validation and Review of Surgical Time

We validated the estimates of time for surgical reference services using four methods. First, we compared our results with objective data on surgical time and number of visits using operating room time logs and hospital length of stay. Second, we compared our estimates with those from other studies, such as those conducted by surgical specialty societies and the Physician Payment Review Commission (PPRC). Third, for those services for which we have obtained data from both national surveys and small group panels, we compared estimates of time to determine the extent of agreement between the two. Finally, using the RBRVS assessment panels, we conducted a systematic review of all time estimates. Below we discuss the validation of intra-service and pre- and post-service time using comparative data, followed by a description of the results obtained from the assessment panel reviews.

4.4.1 Validation of Intra-Service Time: Comparative Analysis

We compared the estimates of intra-service time we obtained with available data from hospital operating room (O.R.) logs. We collected skin-to-skin times from O.R. data obtained from four medical centers and seven community hospitals, located in the East, Midwest, and Western regions of the United States. In addition, a Battelle study,[9] commissioned by the American Society of Anesthesiology, collected O.R. time logs from sixteen hospitals representing different geographic regions of the

country. Although one of our hospitals (hospital A) and the Battelle study reported data using CPT coding, the remaining data were coded using the ICD9-CM system. We translated the ICD-9 codes into CPT codes using physicians with expertise in coding. The translated codes were validated using the surgical records of a large hospital that recorded surgical procedures using both CPT and ICD9-CM.

Table 4.11 presents these comparisons for procedures with available O.R. data. A small number of the procedures in the table are not reference services, but are included to allow for additional comparisons. Hospitals A and B are teaching hospitals and the estimates represent median times for two years of data: 1988 and 1989. Hospital groups C and D represent 1987 mean times for teaching and non-teaching cases, respectively, from a system of nine hospitals (two medical centers and seven community hospitals). The data from the Battelle study are median times for 1986 from sixteen hospitals of varying characteristics.

As shown in Table 4.11, there is wide variation among hospitals in skin-to-skin time for each procedure. For example, the operative times for an inguinal hernia repair range from 38 to 70 minutes. Part of this variation is due to the differences in teaching activity across the hospitals. However, some variation may result from differences in the practice style of surgeons at these hospitals, the patient mix, or in the efficiency of the hospital operating room. A larger pool of data from a broad sample of hospitals is required to provide a

rigorous comparison with the data we obtained. Our results represent average times from a national sample of surgeons. Despite these shortcomings, for most of the procedures shown, our estimates of intra-service time are within the range of those provided by the different hospitals.

For those services for which we have obtained data in the RBRVS study from both national surveys and small group panels, we compared our estimates of intra-service time to determine the extent of agreement between the two sources. As described elsewhere,[4,5,6] in phases I and II of the RBRVS study, we used large national surveys of physicians to estimate the time and work of procedures. In phase III, we employed small groups of physicians. A comparison of estimates from these two sources can provide insight into the reproducibility and validity of the time estimates.

Table 4.12 shows that, in general, the estimates of intra-service time from the small groups and the national survey are similar. The rightmost column of the table includes the ratio of the national survey to small group estimate for each service. The median of these ratios is 1.00; and, for more than 90 percent of the services shown, the estimates from the two sources differ by less than 20 percent.

Finally, we compared our results for intra-service time with those obtained from two studies conducted for specialty societies. The first study was was funded by several cardiovascular and thoracic surgical societies and carried out by

Abt Associates.[10] The second study was conducted by Battelle Human Affairs Research Centers for three gastroenterological associations.[11] Both studies used large national surveys of specialists to obtain estimates of the time and work of selected procedures. The methods used to estimate intra-service time in the two studies were similar to those used in the RBRVS study.

Table 4.13 compares our estimates of intra-service time with those obtained from the Abt and Battelle studies. The rightmost column of the table includes the ratio of the two time estimates. As shown, our estimates are similar to those found by the other studies for these services.

4.4.2 Validation of Pre- and Post-Operative Time: Comparative Analysis

We compared our post-operative times with objective information from other sources. First, we compared the number of post-operative hospital visits with data on hospital length of stay published by the Commission on Professional and Hospital Activities (CPHA).[12] We expected the number of visits to be similar to and positively correlated with the typical length of stay for a procedure.

Figure 4.1 presents this comparison for all inpatient procedures in our study. As shown in the figure, length of stay and the number of hospital visits are consistent across procedures and positively correlated (simple correlation = 0.87).

This comparison suggests that the estimates of the number of hospital visits are likely to be valid.

Second, we compared the estimates of time per post-discharge office visit that we obtained from surveys with data from the National Ambulatory Medical Care Survey (NAMCS), 1985, as summarized by PPRC.[13] These estimates for comparable surgical specialties are shown in Table 4.14. Our results are, in general, consistent with those from NAMCS. The typical duration of visits that we obtained are comparable for 8 of the 10 specialties. However, our estimates for thoracic surgery and plastic surgery are 40 and 100 percent higher, respectively. The findings for plastic surgery should be interpreted with caution, however, as the NAMCS results for this specialty are quite low in relationship to that of other specialties and appear to lack face validity.

We also compared our results for pre- and post-surgical time with those from the Surgical Global Service project conducted by PPRC.[13] PPRC conducted a study to estimate the work of pre- and post-operative visits included in the global surgical package. Using both objective data and surveys of physicians, PPRC developed visit patterns associated with 160 surgical procedures. These patterns included the number and duration of patient visits for both the pre- and post-operative service.

We compared the PPRC estimates for hospital and office post-operative visits with our results. These comparisons are presented in Table 4.15. To increase the number of comparisons,

we included a small number of non-reference services in the table. The table also contains the ratio of the number of visits we obtained for each service compared to the PPRC value. In general, the number of post-operative hospital and office visits are similar.

Table 4.16 summarizes the two ratios shown in Table 4.15, by specialty. The median ratios suggest that, for most specialties, the two sources of data produce similar results. However, the ratio for post-operative office visits for oral and maxillofacial surgery suggests that our estimates may be biased upward. The number of office visits shown in Table 4.15 for services in this specialty range from six to seven visits and appears high relative to those for other services. The number of post-operative office visits are even higher for other procedures that we examined for oral and maxillofacial surgery (see Table 5.11.). The median ratio of our result to that of PPRC for these visits was 1.5, suggesting that our estimates may be biased upward by as much as 50 percent. Using a conservative adjustment factor, we decreased the estimates we obtained for the number of post-operative office visits for all services in oral and maxillofacial surgery by 20 percent. The visits included in the final data set and reviewed by the Assessment Panel reflect this adjustment.

4.4.3 Validation of Surgical Time: RBRVS Assessment Panel Reviews

To review surgical times, we used a single survey and the RBRVS Assessment Panels. On the survey, we printed the surgical time estimates from the detailed data set described in section 4.3.2. We sorted the procedures by CPT code.

We asked the panelists to review the time values we obtained, and suggest changes, where necessary. If the values printed on the survey were judged to be unreasonable, the panelist was asked to enter a revised estimate. For those services the respondent did not feel comfortable evaluating, an "NR" (for no response) was entered.

The survey instruments for the review of the times for reference procedures are included in appendix F (Cycle 2, Section D). Using these intruments, we surveyed the assessment panel for cardiothoracic surgery, general surgery, neurosurgery, obstetrics and gynecology, ophthalmology, oral and maxillofacial surgery, orthopedic surgery, otolaryngology, and urology.

4.4.3.1 Results of Review of Surgical Reference Service Time

The assessment panels reviewed the time values for 176 surgical reference services. The results of this review, by specialty and service, are presented in Tables 4.17 and 4.18. The tables include a description of the procedure, and the frequency with which panelists agreed with the time or visit

estimates (OK), or judged that the value should be increased (UP) or decreased (DN). We found that for all services and components the majority of the panelists agreed with the estimates we obtained.

Table 4.19 further summarizes this agreement, by specialty. The table includes the mean percentage of panelists agreeing with our estimate and the mean difference between the panelists' ratings and ours. The results show a high level of agreement with the estimates of time we developed across specialties. When differences occurred, they were small.

We examined most closely those services and components for which the most disagreement with our time estimates occurred. After consultation with clinical experts, we adjusted our ICU visit values for a small number of services in general surgery and neurosurgery. These adjustments are reported in Table 4.20. The final data set of times for surgical reference services reflect these changes.

4.5 Detailed Time Data for Non-Surgical Reference Services

We also constructed a detailed data file of time estimates for non-surgical services. We included two components: intra-service and total-service time. For E/M services, the intra-service period varies by setting. In the office, it is defined as the face-to-face encounter with the patient. For hospital services, the intra-service period includes not only the encounter in the patient's room, but also the time spent while

the physician is on the patient's hospital unit or floor. For nursing home visits, the intra-service period includes all the work while the physician is present at the patient's facility. Finally, the service periods for emergency room and domiciliary/home visits are defined as the total period and include the work from the time the services begin until they are completed.

In addition to the intra-service, the total service period includes the activites that take place before and after the service. Seeing a patient is often preceded by review of records, communication with other professionals, and preparation for procedures with staff. Afterward, the physician documents observations, diagnoses, and plans of treatment, and often communicates further with other professionals, the patient, and relatives. The total service times we estimated for E/M services reflect these activities.

For services such as diagnostic procedures, including services in radiology and pathology and tests in all specialties, we treated the service period as a whole and included the total work from the time these services began until their completion, including the reporting of results. The service period definitions used for non-surgical reference services are presented in Table 4.21.

For each of the time estimates for non-surgical reference services, we included data on the mean value, the standard error of the mean, the source of the information, and the number of

respondents who provided data for each calculation. Since the estimates of work and time for E/M services in the RBRVS study are based on a predictive model that was estimated using a large amount of data from all the specialties we studied, the standard error values and number of respondents for the individual services are not relevant.[6,14,15] For E/M services, we used as the standard error, the average value across all services used to estimate the prediction models. Since thousands of physicians provided data for estimating these models, we designated "999" as the number of respondents for E/M services. We had previously obtained all of the information for this data file in earlier phases of the RBRVS study. We formatted these data to be consistent with the service definitions described above.

Table 4.22 presents the final data elements for selected non-surgical reference services. For each component, the data include the mean, standard error, the number of respondents, and the source of the data. Due to the number of services, the data elements for all non-surgical reference services are not presented in this report, but are included on a computer disk file submitted with the report.

4.6 A Fact Sheet for Reference Service Time

We have designed a fact sheet to summarize the data on reference service time. For each service, we include the mean time value for each component, an indicator of the source of the data, and the average number of respondents who provided data for

the time estimates. We also include the total-service work value for each service from the 1993 MFS. Since the service components differ for surgical and non-surgical services, we used different formats for these categories and separated the services within each specialty. Finally, for some surgical services, in particular minor and non-incisional procedures with zero or 10 day follow-up periods, some components of work may not be applicable. In these instances, we have entered "NA" on the fact sheet.

The fact sheets for selected services in general surgery are presented in Table 4.23. The fact sheets for all specialties are included in Appendix C, Table C.1.

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Figure 4.1

Comparison of the number of hospital visits and median length of hospital stay for inpatient reference procedures

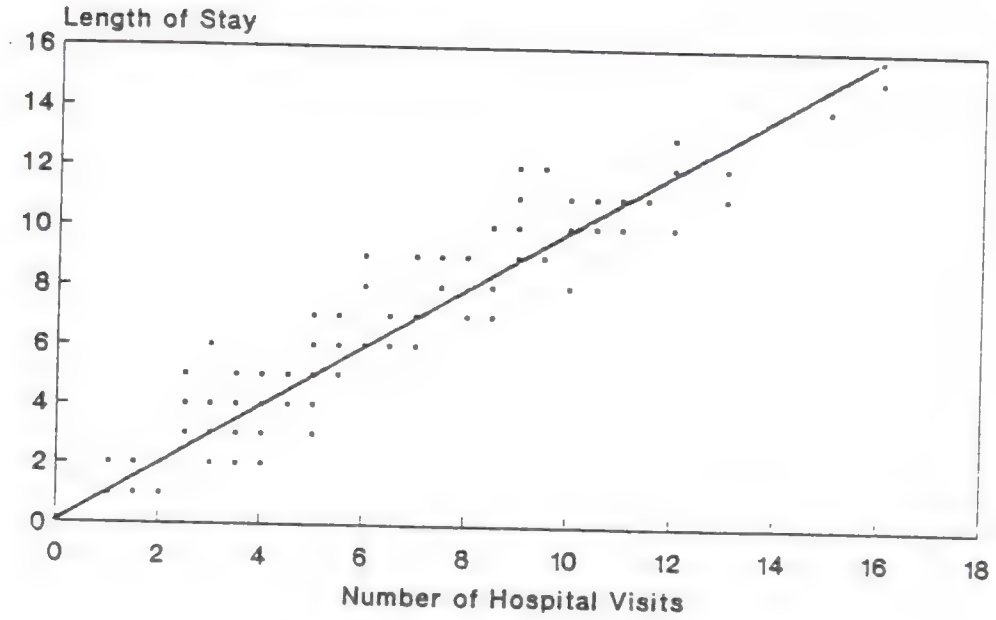

Figure 4.1

Comparison of the number of hospital visits and median length of hospital stay for inpatient reference procedures

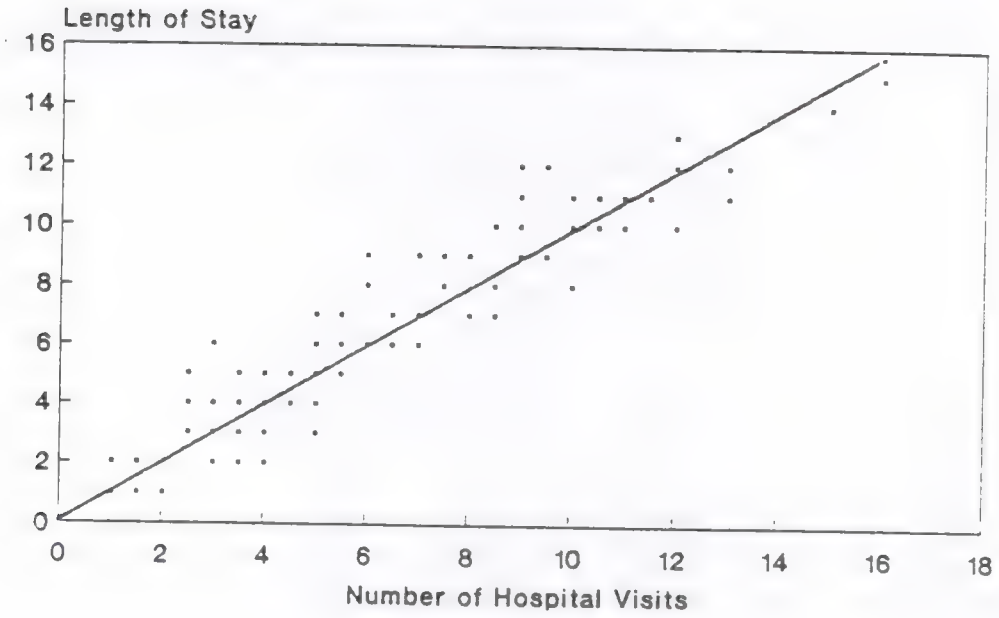

Table 4.1
Specialty reference set: Cardiology
(Harvard RBRVS study -- June, 1993)

CPT		Global surg pack	Description	HCFA ref set	AMA ref set	MFS93 total work	Signif revi-sion	Intra-work Percent S.E.	Intra-work N	Frequency of claims (000s) 1988 BMAD	Frequency of claims (000s) 1990 HIAA
35301		090	Rechanneling of artery	1	s	1608	n	5.6%	155	67	13
32100		090	Exploration/biopsy of chest	1	s	1000	n	9.6	12	7	4
92982		000	Coronary artery dilation	n	o	962	n	7.6	62	79	26
33207		090	Insertion of heart pacemaker	n	o	723	n	6.4	155	42	6
93547	26	000	Heart catheter & angiogram	n	o	482	n	5.8	73	350	94
93618	26	000	Heart rhythm pacing	n	o	424	n	10.6	10	11	1
92950		000	Heart/lungresuscitation/cpr	n	s	377	n	3.6	107	90	.
99245		XXX	Office consultation	2	s	296	n	6.0	999	366	.
99223		XXX	Initial hospital care	1	s	257	n	6.0	999	2,807	.
93503		000	Insert/place heart catheter	n	o	241	n	4.8	268	232	26
33010		000	Drainage of heart sac	2	s	222	n	6.7	94	4	1
99222		XXX	Initial hospital care	1	o	184	n	6.0	999	4,642	.
99215		XXX	Office/outpatient visit, est	1	s	152	n	6.0	999	4,250	.
99242		XXX	Office consultation	2	s	111	n	6.0	999	421	.
99214		XXX	Office/outpatient visit, est	1	s	95	n	6.0	999	9,326	.
93015	26	XXX	Cardiovascular stress test	n	s	74	d	4.0	103	.	.
93880	26	XXX	Extracranial study	n	s	60		.	.	549	.
99213		XXX	Office/outpatient visit, est	1	s	57	n	6.0	999	92,238	.
93227		XXX	ECG monitor/review, 24 hrs	2		53	n	8.4	16	806	.
99212		XXX	Office/outpatient visit, est	1	s	39	n	6.0	999	11,739	.
71020	26	XXX	Chest x-ray	n		22	n	6.5	115	19,734	.
93010		XXX	Electrocardiogram report	n	s	17	n	6.4	204	.	.
93014		XXX	Report on transmitted ECG	2		15	d	10.2	15	162	.

Table 4.1 (continued)
Specialty reference set: Gastroenterology
(Harvard RBRVS study -- June, 1993)

CPT	Global surg pack	Description	HCFA ref set	AMA ref set	MFS93 total work	Signif revi-sion	Intra-work Percent S.E.	Intra-work N	Frequency of claims (000s) 1988 BMAD	Frequency of claims (000s) 1990 HIAA
43832	090	Place gastrostomy tube	1	s	1060	n	6.3%	7	16	1
43262	000	Endoscopy,bile duct/pancreas	n	s	734	n	4.6	76	7	2
43260	000	Endoscopy,bile duct/pancreas	n	s	593	i	3.9	90	38	18
45385	000	Colonoscopy, lesion removal	2	s	516	i	5.4	161	239	103
43255	000	Operative upper GI endoscopy	n	s	437	n	4.0	105	26	6
45380	000	Colonoscopy and biopsy	n	s	397	n	4.0	107	165	93
45378	000	Diagnostic colonoscopy	n	s	367	n	5.4	157	453	224
99245	XXX	Office consultation	2	s	296	n	6.0	999	366	.
43239	000	Upper GI endoscopy, biopsy	n	s	267	n	3.4	104	331	156
99223	XXX	Initial hospital care	1	s	257	n	6.0	999	2,807	.
43235	000	Upper GI endoscopy,diagnosis	n	s	237	n	5.7	128	511	237
99205	XXX	Office/outpatient visit, new	1	s	229	n	6.0	999	959	.
99254	XXX	Initial inpatient consult	1	o	228	n	6.0	999	4,001	.
99222	XXX	Initial hospital care	1	s	184	n	6.0	999	4,642	.
99204	XXX	Office/outpatient visit, new	1	s	172	n	6.0	999	3,242	.
91010	000	Esophagus motility study	1	o	164	n	13.7	12	9	.
99215	XXX	Office/outpatient visit, est	1	s	152	n	6.0	999	4,250	.
43450	000	Dilate esophagus	1	s	138	n	4.4	103	51	17
99233	XXX	Subsequent hospital care	1	s	126	n	6.0	999	2,853	.
45305	000	Proctosigmoidoscopy; biopsy	1	o	100	n	16.7	19	13	6
45330	000	Sigmoidoscopy, diagnostic	n	s	95	n	4.6	175	784	482
99214	XXX	Office/outpatient visit, est	1	s	95	n	6.0	999	9,326	.
99232	XXX	Subsequent hospital care	1	s	90	n	6.0	999	27,665	.
99213	XXX	Office/outpatient visit, est	1	s	57	n	6.0	999	92,238	.
99231	XXX	Subsequent hospital care	1	s	54	n	6.0	999	42,439	.
99212	XXX	Office/outpatient visit, est	1	s	39	n	6.0	999	11,739	.

Table 4.1 (continued)
Specialty reference set: General and family practice
(Harvard RBRVS study -- June, 1993)

CPT		Global surg pack	Description	HCFA ref set	AMA ref set	MFS93 total work	Signif revi-sion	Intra-work Percent S.E.	Intra-work N	Frequency of claims (000s) 1988 BMAD	Frequency of claims (000s) 1990 HIAA
45380		000	Colonoscopy and biopsy	n	s	397	n	4.0%	107	165	93
92950		000	Heart/lungresuscitation/cpr	n	s	377	n	3.6	107	90	.
99245		XXX	Office consultation	2	s	296	n	6.0	999	366	.
99223		XXX	Initial hospital care	1	s	257	n	6.0	999	2,807	.
47000		000	Needle biopsy of liver	n	s	251	n	4.0	104	18	13
43235		000	Upper GI endoscopy,diagnosis	n	s	237	n	5.7	128	511	237
99303		XXX	Nursing facility care	n	s	229	n	6.0	999	600	.
99204		XXX	Office/outpatient visit, new	1	s	172	n	6.0	999	3,242	.
99284		XXX	Emergency dept visit	n	s	169	n	6.0	999	2,568	.
99215		XXX	Office/outpatient visit, est	1	s	152	n	6.0	999	4,250	.
99243		XXX	Office consultation	2	s	148	n	6.0	999	481	.
11401		010	Removal of skin lesion	1	s	126	n	4.2	103	147	178
99233		XXX	Subsequent hospital care	1	s	126	n	6.0	999	2,853	.
99203		XXX	Office/outpatient visit, new	1	s	115	n	6.0	999	2,606	.
62270		000	Spinal fluid tap, diagnostic	1	s	111	n	4.2	305	73	75
99301		XXX	Nursing facility care	n	s	107	n	6.0	999	662	.
99214		XXX	Office/outpatient visit, est	1	s	95	n	6.0	999	9,326	.
20610		000	Drain/inject joint/bursa	1	s	78	n	5.4	583	1,327	429
93015	26	XXX	Cardiovascular stress test	n	s	74	d	4.0	103	.	.
11200		010	Removal of skin tags	1	s	69	n	6.1	74	60	80
99213		XXX	Office/outpatient visit, est	1	s	57	n	6.0	999	92,238	.
99231		XXX	Subsequent hospital care	1	s	54	n	6.0	999	42,439	.
99282		XXX	Emergency dept visit	1	s	49	n	6.0	999	1,499	.
76091	26	XXX	Mammogram, both breasts	n	s	41	d	4.7	112	3,441	.
99201		XXX	Office/outpatient visit, new	1	s	39	n	6.0	999	542	.
99281		XXX	Emergency dept visit	1	s	28	n	6.0	999	614	.
71010	26	XXX	Chest x-ray	1	s	18	n	5.2	102	13,486	.
99211		XXX	Office/outpatient visit, est	1	s	18	n	6.0	999	2,277	.

Table 4.1 (continued)
Specialty reference set: General surgery
(Harvard RBRVS study -- June, 1993)

CPT	Global surg pack	Description	HCFA ref set	AMA ref set	MFS93 total work	Signif revi-sion	Intra-work Percent S.E.	Intra-work N	Frequency of claims (000s) 1988 BMAD	Frequency of claims (000s) 1990 HIAA
48150	090	Partial removal of pancreas	1	s	3000	n	11.4%	12	2	1
35641	090	Artery bypass graft	2		2250	n	6.0	46	1	1
35081	090	Repair defect of artery	1	o	2200	n	5.2	81	27	5
45110	090	Removal of rectum	1	s	2153	n	3.8	97	10	2
44150	090	Removal of colon	2		1890	n	8.0	55	6	2
44140	090	Partial removal of colon			1696	i	3.5	99	.	.
35301	090	Rechanneling of artery	1	o	1608	n	5.6	155	67	13
60500	090	Explore parathyroid glands	1		1529	i	3.9	90	6	2
19240	090	Removal of breast			1460	n	4.2	199	.	.
47610	090	Removal of gallbladder			1375	n	2.1	18	.	.
44120	090	Removal of small intestine	2		1307	n	3.3	98	31	7
58150	090	Total hysterectomy	1	s	1290	i	6.4	176	40	126
38100	090	Removal of spleen, total	2		1190	n	3.3	98	7	4
43832	090	Place gastrostomy tube	1	s	1060	n	6.3	7	16	1
47600	090	Removal of gallbladder			1060	n	4.0	197	.	.
27590	090	Amputate leg at thigh	1		1017	n	4.5	155	27	2
60220	090	Partial removal of thyroid	1	s	979	n	8.5	14	5	6
34101	090	Removal of artery clot	2		868	n	10.4	45	11	1
15100	090	Skin split graft procedure	2		800	n	4.3	193	27	10
36830	090	Artery-vein graft	2		773	n	6.4	52	36	5
46260	090	Hemorrhoidectomy	2		665	n	3.5	98	9	17
49505	090	Repair inguinal hernia			612	i	4.4	204	.	.
44950	090	Appendectomy	1	s	602	n	5.7	146	8	59
19140	090	Removal of breast tissue	1	s	486	n	7.1	31	3	4
19120	090	Removal of breast lesion			480	n	4.6	101	.	.
46934	090	Destruction of hemorrhoids	2		381	n	7.7	13	12	13
31625	000	Bronchoscopy with biopsy	1	o	334	n	5.1	93	67	21
36800	000	Insertion of cannula	2		241	n	3.4	95	30	6

Table 4.1 (continued)
Specialty reference set: General surgery
(Harvard RBRVS study -- June, 1993)

CPT	Global surg pack	Description	HCFA ref set	AMA ref set	MFS93 total work	Signif revi-sion	Intra-work Percent S.E.	Intra-work N	Frequency of claims (000s) 1988 BMAD	Frequency of claims (000s) 1990 HIAA
99254	XXX	Initial inpatient consult	1	o	228	n	6.0%	999	4,001	.
12011	010	Repair superficial wound(s)	2	o	170	i	8.5	101	39	104
20220	000	Bone biopsy, trocar/needle	2		126	n	12.7	16	47	15
99232	XXX	Subsequent hospital care	1	o	90	n	6.0	999	27,665	.
99213	XXX	Office/outpatient visit, est	1	o	57	n	6.0	999	92,238	.

Table 4.1 (continued)
Specialty reference set: Internal medicine
(Harvard RBRVS study -- June, 1993)

CPT		Global surg pack	Description	HCFA ref set	AMA ref set	MFS93 total work	Signif revi-sion	Intra-work Percent S.E.	Intra-work N	Frequency of claims (000s) 1988 BMAD	Frequency of claims (000s) 1990 HIAA
32020		000	Insertion of chest tube	1	s	439	i	4.2%	370	52	24
92950		000	Heart/lungresuscitation/cpr	n	s	377	n	3.6	107	90	.
99255		XXX	Initial inpatient consult	1	s	314	n	6.0	999	972	.
99245		XXX	Office consultation	2	s	296	n	6.0	999	366	.
99285		XXX	Emergency dept visit	1	s	263	n	6.0	999	2,140	.
99223		XXX	Initial hospital care	1	s	257	n	6.0	999	2,807	.
31500		000	Insert of emergency airway	1	s	232	i	4.8	293	177	36
99205		XXX	Office/outpatient visit, new	1	s	229	n	6.0	999	959	.
99303		XXX	Nursing facility care	n	s	229	n	6.0	999	600	.
99254		XXX	Initial inpatient consult	1	s	228	n	6.0	999	4,001	.
99222		XXX	Initial hospital care	1	s	184	n	6.0	999	4,642	.
99253		XXX	Initial inpatient consult	1	s	157	n	6.0	999	730	.
32000		000	Drainage of chest	1	s	154	n	4.6	359	118	25
99215		XXX	Office/outpatient visit, est	1	s	152	n	6.0	999	4,250	.
99233		XXX	Subsequent hospital care	1	s	126	n	6.0	999	2,853	.
99203		XXX	Office/outpatient visit, new	1	s	115	n	6.0	999	2,606	.
62270		000	Spinal fluid tap, diagnostic	1	s	111	n	4.2	305	73	75
99238		XXX	Hospital discharge day	2	s	107		.	.	3,492	.
45330		000	Sigmoidoscopy, diagnostic	n	s	95	n	4.6	175	784	482
99232		XXX	Subsequent hospital care	1	s	90	n	6.0	999	27,665	.
99312		XXX	Nursing facility care,subseq	n	s	88	n	6.0	999	3,147	.
93015	26	XXX	Cardiovascular stress test	n	s	74	d	4.0	103	.	.
11200		010	Removal of skin tags	1	s	69	n	6.1	74	60	80
99213		XXX	Office/outpatient visit, est	1	s	57	n	6.0	999	92,238	.
99212		XXX	Office/outpatient visit, est	1	s	39	n	6.0	999	11,739	.
71020	26	XXX	Chest x-ray	n	s	22	n	6.5	115	19,734	.
71010	26	XXX	Chest x-ray	1	s	18	n	5.2	102	13,486	.
99211		XXX	Office/outpatient visit, est	1	s	18	n	6.0	999	2,277	.
93010		XXX	Electrocardiogram report			17	n	6.4	204	.	.

Table 4.1 (continued)
Specialty reference set: Oral and maxillofacial surgery
(Harvard RBRVS study -- June, 1993)

CPT	Global surg pack	Description	HCFA ref set	AMA ref set	MFS93 total work	Signif revi-sion	Intra-work Percent S.E.	Intra-work N	Frequency of claims (000s) 1988 BMAD	Frequency of claims (000s) 1990 HIAA
21155	090	Reconstruct face, Lefort 3			3580		. %	.	.	.
21147	090	Reconstruct face, Lefort 1			2016		.	.	.	.
21145	090	Reconstruct face, Lefort 1			1878		.	.	.	.
21249	090	Reconstruction of jaw			1700		.	.	.	.
21470	090	Repair lower jaw fracture	2	o	1409	n	5.1	117	1	1
21365	090	Repair cheek bone fracture	2	o	1388	n	5.5	114	.	2
21240	090	Reconstruction of jaw joint	2	o	1300	n	6.8	102	.	3
21248	090	Reconstruction of jaw	2		1100		.	.	.	1
21215	090	Lower jaw bone graft			1000		.	.	.	.
21210	090	Face bone graft	2		950		.	.	.	1
21462	090	Repair lower jaw fracture	2		908		.	.	.	1
21030	090	Removal of face bone lesion	2		700		.	.	1	2
21041	090	Removal of jaw bone lesion	2		500		.	.	1	2
21110	090	Interdental fixation	2		500		.	.	.	2
99244	XXX	Office consultation	2	s	223	n	6.0	999	1,545	.
21040	090	Removal of jaw bone lesion	2		200		.	.	2	3
21485	090	Reset dislocated jaw	2		190		.	.	.	1
21315	010	Treatment of nose fracture	2		140		.	.	.	2
99203	XXX	Office/outpatient visit, new	1	s	115	n	6.0	999	2,606	.
21480	000	Reset dislocated jaw	2		61		.	.	1	1
21310	000	Treatment of nose fracture	2		58		.	.	1	3
99213	XXX	Office/outpatient visit, est	1	o	57	n	6.0	999	92,238	.
99231	XXX	Subsequent hospital care	1	s	54	n	6.0	999	42,439	.

Table 4.1 (continued)
Specialty reference set: Neurosurgery
(Harvard RBRVS study -- June, 1993)

CPT	Global surg pack	Description	HCFA ref set	AMA ref set	MFS93 total work	Signif revi-sion	Intra-work Percent S.E.	Intra-work N	Frequency of claims (000s) 1988 BMAD	Frequency of claims (000s) 1990 HIAA
61520	090	Removal of brain lesion	2	s	3807	n	4.0%	18	.	1
61700	090	Inner skull vessel surgery	n	s	3458	n	4.5	108	2	2
61518	090	Removal of brain lesion	2	s	3204	n	4.2	108	2	1
61512	090	Remove brain lining lesion	2	s	2408	n	4.0	112	3	1
61510	090	Removal of brain lesion	n	s	2322	n	3.9	108	6	4
22558	090	Lumbar spine fusion	2		2196	n	9.1	11	.	1
61312	090	Open skull for drainage	2	s	2039	n	4.7	111	7	2
22554	090	Neck spine fusion	2	s	1800	i	8.7	17	5	8
63042	090	Low back disk surgery	n	s	1714	n	4.2	199	6	6
35301	090	Rechanneling of artery	1	s	1608	n	5.6	155	67	13
63017	090	Removal of spinal lamina	n	s	1574	n	5.4	278	8	3
61154	090	Pierce skull, remove clot	n	s	1357	n	5.2	110	4	1
63047	090	Removal of spinal lamina	1	s	1266	n	6.4	17	13	3
63030	090	Low back disk surgery	n	s	1202	n	5.0	292	22	35
63780	090	Insert spinal canal catheter	1		617	n	27.3	10	2	1
64721	090	Carpal tunnel surgery	1	s	396	n	4.9	529	55	54
99254	XXX	Initial inpatient consult	1	o	228	n	6.0	999	4,001	.
64421	010	Injection for nerve block	2		205	n	17.2	11	13	4
99204	XXX	Office/outpatient visit, new	1	o	172	n	6.0	999	3,242	.
62284	000	Injection for myelogram	n	s	153	n	6.5	89	38	33
64400	010	Injection for nerve block	2		132	d	13.4	10	8	4
62270	000	Spinal fluid tap, diagnostic	1	s	111	n	4.2	305	73	75
99232	XXX	Subsequent hospital care	1	o	90	n	6.0	999	27,665	.
99213	XXX	Office/outpatient visit, est	1	o	57	n	6.0	999	92,238	.
99231	XXX	Subsequent hospital care	1	o	54	n	6.0	999	42,439	.

Table 4.1 (continued)
Specialty reference set: Obstetrics and gynecology
(Harvard RBRVS study -- June, 1993)

CPT	Global surg pack	Description	HCFA ref set	AMA ref set	MFS93 total work	Signif revi-sion	Intra-work Percent S.E.	Intra-work N	Frequency of claims (000s) 1988 BMAD	Frequency of claims (000s) 1990 HIAA
58240	090	Removal of pelvis contents	2		2858	n	5.3%	6	1	.
58210	090	Extensive hysterectomy	2		2380	i	10.9	11	2	1
58951	090	Resect ovarian malignancy	2		2020	i	13.5	10	1	.
56640	090	Extensive vulva surgery	2		1884	n	7.7	10	.	.
58152	090	Total hysterectomy	2		1400	i	3.0	17	2	5
58950	090	Resect ovarian malignancy	2		1400	n	9.9	11	1	1
58150	090	Total hysterectomy	1	s	1290	i	6.4	176	40	126
59410	MMM	Obstetrical care	n	o	1214	i	6.4	157	1	59
58260	090	Vaginal hysterectomy	1	s	1200	i	4.6	17	6	26
57280	090	Suspension of vagina	2		828	n	17.2	14	1	1
57260	090	Repair of vagina	2		753	n	12.4	18	16	6
58940	090	Removal of ovary(s)	2		649	n	0.6	14	4	7
58720	090	Removal of ovary/tube(s)	1	s	615	n	9.4	17	8	21
57240	090	Repair bladder & vagina	2		535	n	6.7	16	11	4
57520	090	Conization cervix	2		339	n	11.9	19	6	37
58120	010	Dilation and curettage (d&c)	1	s	243	n	5.1	89	50	213
99205	XXX	Office/outpatient visit, new	1	o	229	n	6.0	999	959	.
99254	XXX	Initial inpatient consult	1	o	228	n	6.0	999	4,001	.
99215	XXX	Office/outpatient visit, est	1	o	152	n	6.0	999	4,250	.
56420	010	Drainage of gland abscess	2		133	n	10.8	17	1	6
57454	000	Vagina examination & biopsy	2		126	n	4.3	82	16	195
57500	000	Biopsy of cervix	2	o	96	n	13.7	15	13	49
99232	XXX	Subsequent hospital care	1	s	90	n	6.0	999	27,665	.
58100	000	Biopsy of uterus lining	2	o	71	n	12.8	17	32	130
99213	XXX	Office/outpatient visit, est	1	s	57	n	6.0	999	92,238	.
99231	XXX	Subsequent hospital care	1	s	54	n	6.0	999	42,439	.
99212	XXX	Office/outpatient visit, est	1	s	39	n	6.0	999	11,739	.

Table 4.1 (continued)
Specialty reference set: Ophthalmology
(Harvard RBRVS study -- June, 1993)

CPT	Global surg pack	Description	HCFA ref set	AMA ref set	MFS93 total work	Signif revi-sion	Intra-work Percent S.E.	Intra-work N	Frequency of claims (000s) 1988 BMAD	Frequency of claims (000s) 1990 HIAA
67108	090	Repair detached retina	2		1976	n	15.0%	19	5	2
67107	090	Repair detached retina	1	s	1390	n	5.6	152	16	8
67228	090	Treatment of retinal lesion			1230	i	5.6	115	.	.
65285	090	Repair of eye wound	1	s	1197	n	9.1	82	1	1
67036	090	Removal of inner eye fluid	1	s	1125	n	6.2	84	14	4
66984	090	Remove cataract, insert lens	2		982	n	7.9	257	1,016	182
66983	090	Remove cataract, insert lens	2		848	n	4.9	146	20	7
66985	090	Insert lens prosthesis	2	s	784	n	7.0	255	31	7
67010	090	Partial removal of eye fluid	2	s	662	n	7.3	76	7	1
67227	090	Treatment of retinal lesion	2		623	n	11.9	29	6	3
65855	090	Laser surgery of eye	1	s	462	n	8.1	153	101	18
66761	090	Revision of iris	2	s	374	n	7.8	158	51	10
66821	090	Lasering, secondary cataract	1	s	276	n	9.6	161	449	71
67840	010	Remove eyelid lesion	2		198	n	7.9	171	22	10
92004	XXX	Eye exam, new patient	2		160	i	7.4	177	1,741	.
99243	XXX	Office consultation	2	s	148	n	6.0	999	481	.
68840	010	Explore/irrigate tear ducts	2		122	n	8.6	13	9	2
92012	XXX	Eye exam,established patient	2		81	n	8.4	178	4,926	.
67515	000	Inject/treat eye socket	2		61	n	8.9	13	20	4
92225	XXX	Special eye exam, initial	1		58	n	6.6	83	606	.
99213	XXX	Office/outpatient visit, est	1	s	57	n	6.0	999	92,238	.
92083	XXX	Visual field examination(s)	2		51	n	8.0	45	697	.
92285	XXX	Eye photography	2		20	d	12.7	17	56	.

Table 4.1 (continued)
Specialty reference set: Orthopedics
(Harvard RBRVS study -- June, 1993)

CPT	Global surg pack	Description	HCFA ref set	AMA ref set	MFS93 total work	Signif revi-sion	Intra-work Percent S.E.	Intra-work N	Frequency of claims (000s) 1988 BMAD	Frequency of claims (000s) 1990 HIAA
22812	090	Fusion of spine	2		2700		. %	.	.	.
22141	090	Reconstruct thorax spine	2		2525		.	.	.	.
27132	090	Total hip replacement	2		2129	n	3.2	147	5	1
27091	090	Removal of hip prosthesis	2		2033	n	6.3	69	1	.
27447	090	Total knee replacement	1		1955	n	3.1	149	111	19
27130	090	Total hip replacement	1		1855	n	5.8	104	86	17
23472	090	Reconstruct shoulder joint	2		1597	n	6.0	52	3	1
63017	090	Removal of spinal lamina	n	o	1574	n	5.4	278	8	3
27244	090	Repair of thigh fracture	1		1435	n	4.5	259	114	9
27236	090	Repair of thigh fracture	2		1404	n	3.3	151	76	7
27125	090	Partial hip replacement	2		1312	n	3.3	155	32	3
24515	090	Repair humerus fracture	2		1084	n	4.7	76	3	1
27524	090	Repair of kneecap fracture	2		930	n	5.7	11	4	2
27310	090	Exploration of knee joint	2		820	n	9.9	11	2	1
29881	090	Knee arthroscopy/surgery	1		741	n	4.8	247	26	69
28292	090	Correction of bunion	2		619	n	5.8	102	24	21
25605	090	Treat fracture radius/ulna	2		538	n	3.8	153	34	29
27425	090	Lateral retinacular release	2		501	n	16.1	13	2	7
64721	090	Carpal tunnel surgery	1	o	396	n	4.9	529	55	54
25111	090	Remove wrist tendon lesion	2		322	n	4.5	78	4	19
26055	090	Incise finger tendon sheath	1		253	n	4.3	78	17	14
99254	XXX	Initial inpatient consult	1	o	228	n	6.0	999	4,001	.
28470	090	Treat metatarsal fracture	2		174	n	5.4	77	16	24
99204	XXX	Office/outpatient visit, new	1	o	172	n	6.0	999	3,242	.
20610	000	Drain/inject joint/bursa	1	o	78	n	5.4	583	1,327	429
99213	XXX	Office/outpatient visit, est	1	o	57	n	6.0	999	92,238	.
99231	XXX	Subsequent hospital care	1	o	54	n	6.0	999	42,439	.
73510	XXX	X-ray exam of hip	2		20		.	.	.	.
73560	XXX	X-ray exam of knee	2		16		.	.	.	.

Table 4.1 (continued)
Specialty reference set: Otolaryngology
(Harvard RBRVS study -- June, 1993)

CPT	Global surg pack	Description	HCFA ref set	AMA ref set	MFS93 total work	Signif revi-sion	Intra-work Percent S.E.	Intra-work N	Frequency of claims (000s) 1988 BMAD	Frequency of claims (000s) 1990 HIAA
41155	090	Tongue, jaw, & neck surgery	2		2323	n	11.8%	15	1	.
42420	090	Excise parotid gland/lesion	2	s	1850	n	4.1	15	2	2
69642	090	Revise middle ear & mastoid	2	s	1625	n	6.3	10	.	1
31225	090	Removal of upper jaw	2	s	1508	n	7.1	12	1	.
31360	090	Removal of larynx	2	s	1508	n	6.5	15	2	.
69641	090	Revise middle ear & mastoid	1		1220	n	4.2	99	1	2
69633	090	Rebuild eardrum structures	2	s	1168	n	3.8	10	.	1
69631	090	Repair eardrum structures	2		949	n	9.8	15	3	9
41120	090	Partial removal of tongue	2		877	n	9.8	15	1	.
31201	090	Removal of ethmoid sinus	2		786	n	11.4	15	2	4
31255	000	Removal of ethmoid sinus	2		691	n	12.4	15	2	5
42440	090	Excision submaxillary gland	2	s	656	n	9.0	15	4	3
30520	090	Repair of nasal septum	n	s	550	n	9.1	16	9	45
31603	000	Incision of windpipe	2		413	n	5.6	298	3	1
31541	000	Operative laryngoscopy	2		353	n	14.3	15	9	9
31535	000	Operative laryngoscopy	2		314	n	4.2	102	9	4
99244	XXX	Office consultation	2	s	223	n	6.0	999	1,545	.
21320	010	Treatment of nose fracture	2		180	d	4.6	103	1	9
99204	XXX	Office/outpatient visit, new	1	o	172	n	6.0	999	3,242	.
69433	010	Create eardrum opening	1		146	n	10.8	15	21	13
31575	000	Diagnostic laryngoscopy	1	o	108	n	12.9	15	109	66
99202	XXX	Office/outpatient visit, new	1	o	77	n	6.0	999	1,667	.
31505	000	Diagnostic laryngoscopy	1	o	61	n	11.4	15	36	16
99213	XXX	Office/outpatient visit, est	1	o	57	n	6.0	999	92,238	.

Table 4.1 (continued)
Specialty reference set: Pathology
(Harvard RBRVS study -- June, 1993)

CPT		Global surg pack	Description	HCFA ref set	AMA ref set	MFS93 total work	Signif revi-sion	Intra-work Percent S.E.	Intra-work N	Frequency of claims (000s) 1988 BMAD	Frequency of claims (000s) 1990 HIAA
99254		XXX	Initial inpatient consult	1	s	228	n	6.0%	999	4,001	.
88309	26	XXX	Tissue exam by pathologist	1	s	227	n	4.6	628	260	.
88307	26	XXX	Tissue exam by pathologist	2	s	158	n	4.4	834	442	.
80502	26	XXX	Lab pathology consultation	2	s	132	n	6.9	148	32	.
88331	26	XXX	Pathology consult in surgery			118	n	4.7	274	.	.
88173	26	XXX	Interpretation of smear	n	s	107	n	4.4	87	63	.
86078	26	XXX	Physician blood bank service	2	s	93	n	7.4	80	5	.
88305	26	XXX	Tissue exam by pathologist	2	s	74	n	5.5	836	1,413	.
85105	26	XXX	Bone marrow, interpretation	2	s	62	n	4.7	86	66	.
99213		XXX	Office/outpatient visit, est	1	s	57	n	6.0	999	92,238	.
88104	26	XXX	Microscopic exam of cells	n	s	56	n	4.3	264	447	.
88160	26	XXX	Cytopathology	n	s	50	d	5.4	92	141	.
80500	26	XXX	Lab pathology consultation	1	s	36	i	5.3	217	845	.
88311	26	XXX	Decalcify tissue	2	s	24	i	8.3	73	191	.
88304	26	XXX	Tissue exam by pathologist	2	s	22	n	4.3	647	1,465	.
88302	26	XXX	Tissue exam by pathologist	2	s	12	n	5.4	555	345	.
88300	26	XXX	Tissue exam by pathologist	1	s	8	n	5.5	456	382	.

Table 4.1 (continued)
Specialty reference set: Plastic surgery
(Harvard RBRVS study -- June, 1993)

CPT	Global surg pack	Description	HCFA ref set	AMA ref set	MFS93 total work	Signif revi-sion	Intra-work Percent S.E.	Intra-work N	Frequency of claims (000s) 1988 BMAD	Frequency of claims (000s) 1990 HIAA
15755	090	Microvascular free flap	n	s	2813	n	13.9%	14	.	.
15946	090	Removal of pressure sore	2	s	1966	n	5.6	100	1	.
15732	090	Muscle-skin flap, head/neck	2	s	1200	n	14.1	10	2	.
15831	090	Excise excessive skin tissue	2		1158	n	16.3	10	.	2
19342	090	Delayed breast prosthesis	2		1056	n	9.9	11	.	2
15260	090	Skin full graft procedure	2	o	950	n	4.0	102	14	4
15100	090	Skin split graft procedure	2		800	n	4.3	193	27	10
15220	090	Skin full graft procedure	2		737	n	2.1	12	2	1
14040	090	Skin tissue rearrangement	n	s	713	n	6.7	102	24	14
14000	090	Skin tissue rearrangement	2		539	n	14.1	16	3	3
13300	010	Repair of wound or lesion	2		508	n	4.5	102	5	7
13132	010	Repair of wound or lesion	n	s	418	i	4.0	102	16	21
64721	090	Carpal tunnel surgery	1	s	396	n	4.9	529	55	54
13100	010	Repair of wound or lesion	2		304	n	12.0	16	2	4
11642	010	Removal of skin lesion	n	o	286	n	4.2	204	156	37
99254	XXX	Initial inpatient consult	1	o	228	n	6.0	999	4,001	.
15786	010	Abrasion treatment of lesion	2		197	n	14.7	12	5	1
99203	XXX	Office/outpatient visit, new	1	s	115	n	6.0	999	2,606	.
99242	XXX	Office consultation	2	s	111	n	6.0	999	421	.
99213	XXX	Office/outpatient visit, est	1	s	57	n	6.0	999	92,238	.
99231	XXX	Subsequent hospital care	1	s	54	n	6.0	999	42,439	.

Table 4.1 (continued)
Specialty reference set: Psychiatry
(Harvard RBRVS study -- June, 1993)

CPT	Global surg pack	Description	HCFA ref set	AMA ref set	MFS93 total work	Signif revi-sion	Intra-work Percent S.E.	Intra-work N	Frequency of claims (000s) 1988 BMAD	Frequency of claims (000s) 1990 HIAA
99255	XXX	Initial inpatient consult	1	s	314	n	6.0%	999	972	.
99245	XXX	Office consultation	2	s	296	n	6.0	999	366	.
99285	XXX	Emergency dept visit	1	s	263	n	6.0	999	2,140	.
99223	XXX	Initial hospital care	1	s	257	n	6.0	999	2,807	.
99275	XXX	Confirmatory consultation	2	s	232		.	.	8	.
99254	XXX	Initial inpatient consult	1	s	228	n	6.0	999	4,001	.
90801	XXX	Psychiatric interview	2	s	217	n	3.3	198	254	.
90847	XXX	Special family therapy	n	s	217	i	3.2	193	18	.
90845	XXX	Medical psychoanalysis	n	s	176	i	4.6	112	.	.
90844	XXX	Psychotherapy, 45-50 min	1	s	171	i	3.2	479	2,241	.
99233	XXX	Subsequent hospital care	1	s	126	n	6.0	999	2,853	.
99263	XXX	Follow-up inpatient consult	2	s	117	n	6.0	999	364	.
90843	XXX	Psychotherapy, 20-30 min	2	s	109	i	4.7	564	2,136	.
99238	XXX	Hospital discharge day	2	s	107		.	.	3,492	.
90862	XXX	Medication management	2	s	94	n	6.0	99	636	.
99232	XXX	Subsequent hospital care	1	s	90	n	6.0	999	27,665	.
99262	XXX	Follow-up inpatient consult	2	s	76	n	6.0	999	1,436	.
99231	XXX	Subsequent hospital care	1	s	54	n	6.0	999	42,439	.
90853	XXX	Special group therapy	2	s	43	i	5.0	87	612	.

Table 4.1 (continued)
Specialty reference set: Radiology
(Harvard RBRVS study -- June, 1993)

CPT		Global surg pack	Description	HCFA ref set	AMA ref set	MFS93 total work	Signif revi-sion	Intra-work Percent S.E.	Intra-work N	Frequency of claims (000s) 1988 BMAD	Frequency of claims (000s) 1990 HIAA
77425	26	XXX	Weekly radiation therapy	1		242	i	6.5%	110	444	.
79000	26	XXX	Nuclear therapy, thyroid	n	o	178	n	5.0	119	7	.
70551	26	XXX	Magnetic image, brain (mri)	1		147	i	5.8	78	391	.
78465	26	XXX	Nuclear scan, heart muscle	1	o	145	n	3.1	107	99	.
70470	26	XXX	Contrast cat scans of head	1		126	i	8.5	99	745	.
78461	26	XXX	Nuclear scan, heart muscle	n	o	122	n	2.4	108	318	.
78472	26	XXX	Nuclear scan, heart muscle	n	o	97		.	.	73	.
74363	26	XXX	X-ray, bile duct dilatation	n	s	88		.	.	.	.
78306	26	XXX	Nuclear scan of skeleton	1	o	86	i	3.6	124	847	.
70450	26	XXX	Cat scan of head or brain	1		85		.	.	1,202	.
76700	26	XXX	Echo exam of abdomen	1		80	d	3.8	107	1,143	.
78580	26	XXX	Nuclear scan of lung	n	o	73	i	4.8	122	230	.
76872	26	XXX	Echo exam of prostate	n	o	69		.	.	68	.
76516	26	XXX	Echo exam of eye	1		55		.	.	698	.
76091	26	XXX	Mammogram, both breasts	n	o	41	d	4.7	112	3,441	.
74740	26	XXX	X-ray female genital tract	n	s	37		.	.	.	.
70150	26	XXX	X-ray exam of facial bones	1		25		.	.	61	.
71020	26	XXX	Chest x-ray	n	o	22	n	6.5	115	19,734	.
71010	26	XXX	Chest x-ray	1	o	18	n	5.2	102	13,486	.
73620	26	XXX	X-ray exam of foot	1	o	15		.	.	1,173	.
72020	26	XXX	X-ray exam of spine	1	o	14		.	.	108	.

Table 4.1 (continued)
Specialty reference set: Cardiothoracic surgery
(Harvard RBRVS study -- June, 1993)

CPT	Global surg pack	Description	HCFA ref set	AMA ref set	MFS93 total work	Signif revi-sion	Intra-work Percent S.E.	Intra-work N	Frequency of claims (000s) 1988 BMAD	Frequency of claims (000s) 1990 HIAA
33870	090	Transverse aortic arch graft	1		3747	n	3.7%	9	.	.
33430	090	Replacement of mitral valve			2921	i	11.8	12	.	.
33405	090	Replacement of aortic valve			2827	n	5.6	81	.	.
33514	090	Coronary arteries bypass			2748	n	2.3	10	.	.
33425	090	Repair of mitral valve	2		2538	n	11.6	12	1	1
33512	090	Coronary arteries bypass			2488	n	5.6	80	.	.
33510	090	Coronary artery bypass			2230	n	2.3	10	.	.
35081	090	Repair defect of artery	1	s	2200	n	5.2	81	27	5
33500	090	Repair heart vessel fistula	2	s	2098	n	3.7	9	.	.
32480	090	Partial removal of lung			1730	n	4.4	91	.	.
35301	090	Rechanneling of artery	1	s	1608	n	5.6	155	67	13
32500	090	Partial removal of lung	n	o	1300	i	11.2	12	6	3
39010	090	Exploration of chest	2		1231	n	18.8	11	1	1
32100	090	Exploration/biopsy of chest	1	s	1000	n	9.6	12	7	4
39020	090	Exploration of chest	2		829	n	4.0	23	1	.
33207	090	Insertion of heart pacemaker	n	s	723	n	6.4	155	42	6
33206	090	Insertion of heart pacemaker	n	o	600	n	6.9	7	10	2
39400	010	Visualization of chest	2		508	n	4.5	92	8	4
32020	000	Insertion of chest tube	1	o	439	i	4.2	370	52	24
99223	XXX	Initial hospital care	1	s	257	n	6.0	999	2,807	.
99244	XXX	Office consultation	2	o	223	n	6.0	999	1,545	.
33010	000	Drainage of heart sac	2	o	222	n	6.7	94	4	1
32000	000	Drainage of chest	1	o	154	n	4.6	359	118	25
99213	XXX	Office/outpatient visit, est	1	o	57	n	6.0	999	92,238	.
99231	XXX	Subsequent hospital care	1	o	54	n	6.0	999	42,439	.

Table 4.1 (continued)
Specialty reference set: Urology
(Harvard RBRVS study -- June, 1993)

CPT	Global surg pack	Description	HCFA ref set	AMA ref set	MFS93 total work	Signif revi-sion	Intra-work Percent S.E.	Intra-work N	Frequency of claims (000s) 1988 BMAD	Frequency of claims (000s) 1990 HIAA
51595	090	Remove bladder; revise tract	2	s	3400	n	5.9%	112	3	1
51590	090	Remove bladder; revise tract	2		3000	n	4.1	13	2	.
55845	090	Extensive prostate surgery	2	s	2654	n	14.5	14	15	4
50236	090	Removal of kidney & ureter	2		2316	n	3.6	14	1	.
50230	090	Removal of kidney	2	s	2041	n	14.8	14	11	4
50780	090	Reimplant ureter in bladder	2	s	1700	n	6.3	14	1	1
50220	090	Removal of kidney	2		1587	n	15.3	14	5	2
55831	090	Removal of prostate	2		1420	n	14.6	14	5	1
55821	090	Removal of prostate	2		1290	n	13.2	14	8	1
52601	090	Prostatectomy (turp)	n	s	1143	n	4.6	114	213	49
50590	090	Fragmenting of kidney stone	2	s	955	n	6.5	65	20	23
54400	090	Insert semi-rigid prosthesis	2		852	n	6.2	100	3	1
52336	000	Cystoscopy, stone removal	2		683	n	5.6	112	7	10
54640	090	Suspension of testis	2	s	650	n	11.4	14	.	6
54520	090	Removal of testis	2		489	n	16.2	14	20	2
54161	010	Circumcision	1		319	n	8.5	14	10	18
52332	000	Cystoscopy and treatment	2		281	n	3.7	110	26	21
99254	XXX	Initial inpatient consult	1	o	228	n	6.0	999	4,001	.
52000	000	Cystoscopy	1	s	200	i	4.4	221	634	260
99204	XXX	Office/outpatient visit, new	1	o	172	n	6.0	999	3,242	.
55700	000	Biopsy of prostate	1	o	156	n	14.5	14	105	30
99242	XXX	Office consultation	2	s	111	n	6.0	999	421	.
51700	000	Irrigation of bladder	2		88	n	7.8	13	54	22
99213	XXX	Office/outpatient visit, est	1	s	57	n	6.0	999	92,238	.
99231	XXX	Subsequent hospital care	1	o	54	n	6.0	999	42,439	.
53670	000	Insert urinary catheter	2	s	50	n	18.1	14	263	66

Key for Table 4.1

Global surg pack = global surgical packaging guideline for the 1993 Medicare Fee Schedule:

090 = major surgery - 90 day follow-up
010 = minor or non-incisional procedure - 10 day follow-up
000 = minor or non-incisional procedure - 0 day follow-up
XXX = non-global service

HCFA ref set = designates status as a HCFA reference service as of 11/92:

1 = on primary HCFA Reference Set
2 = on secondary HCFA Reference Set
n = not on primary or secondary HCFA Reference Sets

AMA ref set = designates status as a AMA RUC reference service as of 11/92:

s = on AMA Reference Set for that specialty
o = on AMA Reference Set, but for a different specialty
blank = not on AMA Reference Set

MFS93 total work = Total work value on the 1993 Medicare Fee Schedule. Reported on the Harvard RBRVS scale of work.

Signif revision = designates whether the final phase 3 Harvard RBRVS value has been significantly revised for the 1993 MFS:

i = Harvard value increased by 20 percent or more
d = Harvard value decreased by 20 percent or more
n = Harvard value not revised or revised by less than 20 percent.

Percent S.E. = standard error for rating of intra-service work from the Harvard RBRVS study, expressed as a percentage of the mean value.

N = number of responses for the rating of intra-service work from the Harvard RBRVS study.

Note: Since the work values for evaluation and mangement services were derived from a regression model and survey responses from more than 1,000 physicians, we use the average standard error (6%) for these services and an N of 999.

1988 BMAD = number of 1988 allowed Medicare Part B claims for the service, in thousands.

1990 HIAA = number of 1990 submitted claims for the service, in thousands, from the Health Insurance Association of America (HIAA) surgical claims summary.

Table 4.2

Survey estimates of immediate pre- and post-service time for surgical reference services: General surgery

CPT-4	Description	Immediate pre-op time (mins) Mean	S.E*	Immediate post-op time (mins) Mean	S.E*	No. of responses
15100	Skin split graft procedure	21	9.1%	28	14.2%	23
19120	Removal of breast lesion	17	11.0	22	17.4	25
19140	Removal of breast tissue	17	11.1	21	17.7	25
19240	Removal of breast	23	8.6	32	13.6	24
20220	Bone biopsy, trocar/needle	13	13.9	16	22.8	21
27590	Amputate leg at thigh	21	10.0	27	16.3	24
27880	Amputation of lower leg	21	10.0	27	16.2	24
31625	Bronchoscopy with biopsy	14	13.6	18	19.8	19
34101	Removal of artery clot	23	8.4	27	13.5	22
35081	Repair defect of artery	33	9.1	40	14.3	22
35301	Rechanneling of artery	28	8.1	35	14.8	22
35641	Artery bypass graft	30	10.3	37	15.3	22
36800	Insertion of cannula	14	14.2	19	15.4	20
36830	Artery-vein graft	18	15.9	21	13.8	19
38100	Removal of spleen, total	21	8.7	32	15.6	25
43832	Place gastrostomy tube	18	9.9	25	16.9	25
43840	Repair of stomach lesion	23	9.8	33	15.8	25
44120	Removal of small intestine	20	9.4	33	16.6	25
44140	Partial removal of colon	23	7.5	35	15.3	25
44143	Partial removal of colon	24	8.1	37	13.9	25
44150	Removal of colon	25	8.3	39	13.9	25
44160	Removal of colon	23	8.3	36	16.1	25
44950	Appendectomy	16	10.8	23	17.1	25

*Standard error is reported as a percent of the mean.

Table 4.2 (continued)

Survey estimates of immediate pre- and post-service time for surgical reference services: General surgery

CPT-4	Description	Immediate pre-op time (mins) Mean	S.E*	Immediate post-op time (mins) Mean	S.E*	No. of responses
45110	Removal of rectum	31	9.2%	41	13.0%	25
45378	Diagnostic colonoscopy	10	13.9	12	18.3	20
46260	Hemorrhoidectomy	17	11.6	19	19.1	24
47600	Removal of gallbladder	18	11.7	28	17.3	25
47605	Removal of gallbladder	19	12.0	28	17.3	25
47610	Removal of gallbladder	18	11.3	33	15.1	25
47620	Removal of gallbladder	19	10.9	36	14.3	25
48150	Partial removal of pancreas	28	8.0	50	16.2	24
49000	Exploration of abdomen	19	8.6	32	15.4	25
49421	Insert abdominal drain	15	11.4	21	18.0	22
49505	Repair inguinal hernia	16	12.9	21	18.9	24
55700	Biopsy of prostate	13	16.9	16	21.5	14
58150	Total hysterectomy	20	13.6	30	21.7	16
60220	Partial removal of thyroid	22	8.9	32	15.9	25
60500	Explore parathyroid glands	22	9.4	32	16.6	24

*Standard error is reported as a percent of the mean.

Table 4.2 (continued)

Survey estimates of immediate pre- and post-service time for surgical reference services: Neurosurgery

CPT-4	Description	Immediate pre-op time (mins) Mean	S.E*	Immediate post-op time (mins) Mean	S.E*	No. of responses
22554	Neck spine fusion	32	9.4%	24	12.1%	16
22558	Lumbar spine fusion	34	12.2	24	13.4	14
35301	Rechanneling of artery	26	10.6	25	9.8	15
61154	Pierce skull, remove clot	30	10.5	23	11.7	16
61312	Open skull for drainage	33	10.0	25	11.8	16
61510	Removal of brain lesion	36	8.6	27	10.9	16
61512	Remove brain lining lesion	38	10.3	29	11.2	16
61518	Removal of brain lesion	47	12.0	32	12.9	16
61520	Removal of brain lesion	49	10.2	32	13.1	16
61700	Inner skull vessel surgery	43	10.8	32	11.5	16
63017	Removal of spinal lamina	29	9.6	24	11.8	16
63030	Low back disk surgery	27	10.7	21	15.2	16
63042	Low back disk surgery	28	10.2	23	12.5	16
63047	Removal of spinal lamina	30	9.5	23	12.5	16
63780	Insert spinal canal catheter	26	13.6	20	15.2	14
64721	Carpal tunnel surgery	18	12.8	14	14.1	16

*Standard error is reported as a percent of the mean.

Table 4.2 (continued)

Survey estimates of immediate pre- and post-service time for surgical reference services: Obstetrics & gynecology

CPT-4	Description	Immediate pre-op time (mins) Mean	S.E*	Immediate post-op time (mins) Mean	S.E*	No. of responses
57240	Repair bladder & vagina	19	12.7%	23	19.0%	16
57260	Repair of vagina	19	12.7	23	19.0	16
57280	Suspension of vagina	21	11.4	27	19.2	14
57520	Conization cervix	16	12.5	20	14.4	17
58120	Dilation and curettage (d&c)	12	24.3	17	19.7	17
58150	Total hysterectomy	20	13.1	24	20.3	17
58152	Total hysterectomy	20	13.1	25	19.5	17
58260	Vaginal hysterectomy	19	13.9	23	20.8	16
58720	Removal of ovary/tube(s)	19	13.5	22	18.4	17
58940	Removal of ovary(s)	21	10.5	21	20.6	17
58950	Resect ovarian malignancy	22	15.7	30	22.1	16
59410	Obstetrical care	20	19.4	22	19.8	15

*Standard error is reported as a percent of the mean.

Table 4.2 (continued)

Survey estimates of immediate pre- and post-service time for surgical reference services: Ophthalmology

CPT-4	Description	Immediate pre-op time (mins) Mean	S.E*	Immediate post-op time (mins) Mean	S.E*	No. of responses
65285	Repair of eye wound	25	10.4%	22	12.9%	23
65855	Laser surgery of eye	10	9.3	9	9.3	22
66761	Revision of iris	10	9.1	8	9.5	22
66821	Lasering, secondary cataract	9	8.1	8	10.0	22
66983	Remove cataract, insert lens	18	8.5	15	8.9	22
66984	Remove cataract, insert lens	18	8.2	16	9.4	23
66985	Insert lens prosthesis	18	8.0	15	8.7	23
67010	Partial removal of eye fluid	19	7.5	16	9.2	22
67036	Removal of inner eye fluid	21	8.8	17	10.8	19
67107	Repair detached retina	23	8.5	19	9.0	17
67108	Repair detached retina	24	9.6	19	8.9	16
67227	Treatment of retinal lesion	16	14.0	13	12.1	16
67228	Treatment of retinal lesion	14	13.0	11	11.3	16

*Standard error is reported as a percent of the mean.

Table 4.2 (continued)

Survey estimates of immediate pre- and post-service time for surgical reference services: Orthopedic surgery

CPT-4	Description	Immediate pre-op time (mins) Mean	S.E*	Immediate post-op time (mins) Mean	S.E*	No. of responses
23472	Reconstruct shoulder joint	33	10.8%	23	18.6%	12
24515	Repair humerus fracture	32	8.1	24	15.1	13
25111	Remove wrist tendon lesion	19	9.5	16	15.1	13
25605	Treat fracture radius/ulna	17	23.8	17	11.5	13
25611	Repair fracture radius/ulna	31	9.3	21	12.9	13
26055	Incise finger tendon sheath	16	14.8	15	14.2	13
26115	Removal of hand lesion	19	14.5	19	10.9	11
27091	Removal of hip prosthesis	35	12.7	28	16.0	12
27125	Partial hip replacement	31	11.7	26	17.8	12
27130	Total hip replacement	34	12.0	25	17.2	12
27132	Total hip replacement	36	14.3	25	17.2	12
27230	Treat fracture of thigh	18	49.3	17	55.6	9
27236	Repair of thigh fracture	36	14.1	26	17.3	12
27244	Repair of thigh fracture	38	13.5	26	17.3	12
27310	Exploration of knee joint	25	10.4	21	15.4	12
27332	Removal of knee cartilage	26	12.1	20	14.5	11
27425	Lateral retinacular release	25	11.8	19	13.4	12
27447	Total knee replacement	33	11.4	25	13.5	12
27514	Repair of thigh fracture	37	9.8	26	15.3	12

*Standard error is reported as a percent of the mean.

Table 4.2 (continued)

Survey estimates of immediate pre- and post-service time for surgical reference services: Orthopedic surgery

CPT-4	Description	Immediate pre-op time (mins) Mean	S.E*	Immediate post-op time (mins) Mean	S.E*	No. of responses
27524	Repair of kneecap fracture	26	10.7%	20	13.3%	12
27814	Repair of ankle fracture	30	11.3	23	16.1	12
28292	Correction of bunion	26	13.3	21	10.8	12
29881	Knee arthroscopy/surgery	26	12.8	21	11.3	11
63017	Removal of spinal lamina	38	13.5	29	16.1	10
64721	Carpal tunnel surgery	23	13.7	18	12.1	12

*Standard error is reported as a percent of the mean.

Table 4.2 (continued)

Survey estimates of immediate pre- and post-service time for surgical reference services: Otolaryngology

CPT-4	Description	Immediate pre-op time (mins) Mean	S.E*	Immediate post-op time (mins) Mean	S.E*	No. of responses
30520	Repair of nasal septum	17	13.8%	21	16.0%	10
31201	Removal of ethmoid sinus	18	13.0	22	16.8	10
31225	Removal of upper jaw	29	11.1	31	17.2	10
31255	Removal of ethmoid sinus	19	14.2	23	16.6	10
31360	Removal of larynx	31	12.1	33	15.5	10
31535	Operative laryngoscopy	11	17.4	19	19.4	10
31541	Operative laryngoscopy	13	12.8	20	20.0	10
31603	Incision of windpipe	9	34.7	21	16.7	10
41120	Partial removal of tongue	20	10.6	26	14.7	10
41155	Tongue, jaw, & neck surgery	34	8.1	40	12.9	10
42415	Excise parotid gland/lesion	22	13.3	25	20.2	10
42420	Excise parotid gland/lesion	21	12.9	25	18.8	10
42440	Excision submaxillary gland	15	14.3	20	21.3	10
69631	Repair eardrum structures	20	16.7	24	17.8	10
69632	Rebuild eardrum structures	20	16.7	24	18.1	10
69633	Rebuild eardrum structures	20	15.0	24	18.1	10
69641	Revise middle ear & mastoid	21	14.5	25	18.3	10
69642	Revise middle ear & mastoid	20	13.8	25	18.5	10

*Standard error is reported as a percent of the mean.

Table 4.2 (continued)

Survey estimates of immediate pre- and post-service time for surgical reference services: Cardiothoracic surgery

CPT-4	Description	Immediate pre-op time (mins) Mean	S.E*	Immediate post-op time (mins) Mean	S.E*	No. of responses
31603	Incision of windpipe	15	17.1%	15	18.8%	14
32000	Drainage of chest	16	18.1	12	18.0	14
32020	Insertion of chest tube	17	17.8	14	17.0	14
32100	Exploration/biopsy of chest	31	21.5	29	19.4	14
32480	Partial removal of lung	32	22.6	30	19.2	14
32500	Partial removal of lung	26	21.9	24	13.3	13
33010	Drainage of heart sac	16	23.1	17	14.9	14
33206	Insertion of heart pacemaker	23	17.7	19	22.1	13
33207	Insertion of heart pacemaker	23	17.7	18	21.4	13
33405	Replacement of aortic valve	50	9.4	37	16.1	13
33425	Repair of mitral valve	50	9.4	37	16.6	13
33430	Replacement of mitral valve	48	9.4	37	16.6	13
33500	Repair heart vessel fistula	39	21.5	36	20.1	13
33510	Coronary artery bypass	44	12.1	36	17.9	14
33512	Coronary arteries bypass	45	11.8	37	17.2	14
33514	Coronary arteries bypass	45	11.7	37	17.1	14
33870	Transverse aortic arch graft	55	15.5	45	17.7	14
35081	Repair defect of artery	44	16.0	37	14.5	8
35301	Rechanneling of artery	36	16.7	28	11.4	8
39010	Exploration of chest	26	19.0	22	25.7	14
39020	Exploration of chest	27	19.4	25	25.5	14
39400	Visualization of chest	22	17.1	17	20.3	12

*Standard error is reported as a percent of the mean

Table 4.2 (continued)

Survey estimates of immediate pre- and post-service time for surgical reference services: Urology

CPT-4	Description	Immediate pre-op time (mins) Mean	S.E*	Immediate post-op time (mins) Mean	S.E*	No. of responses
50220	Removal of kidney	31	7.6%	27	11.8%	22
50230	Removal of kidney	34	8.5	31	12.1	22
50236	Removal of kidney & ureter	31	7.8	28	11.9	22
50590	Fragmenting of kidney stone	23	14.0	17	13.9	20
50780	Reimplant ureter in bladder	29	7.4	27	11.9	22
51590	Remove bladder; revise tract	37	6.9	37	12.2	21
51595	Remove bladder; revise tract	38	6.8	37	12.2	21
52332	Cystoscopy and treatment	18	8.3	16	15.2	22
52336	Cystoscopy, stone removal	20	7.3	18	16.3	22
52601	Prostatectomy (turp)	22	8.2	23	12.6	22
54161	Circumcision	14	10.6	15	13.8	22
54400	Insert semi-rigid prosthesis	23	8.9	21	14.3	21
54520	Removal of testis	20	8.0	18	15.0	22
54640	Suspension of testis	21	8.6	19	14.8	21
55821	Removal of prostate	27	8.4	27	12.6	22
55831	Removal of prostate	27	8.3	27	12.9	22
55845	Extensive prostate surgery	32	8.5	31	13.9	22

*Standard error is reported as a percent of the mean

Table 4.3

Survey estimates of later same day post- time
for surgical reference services: General Surgery

CPT-4	Description	Total Later Same Day Post Time (mins)		Later Same Day Post Visits		
		Mean	S.E*	Number	Duration (mins)	No. of responses
15100	Skin split graft procedure	9	11.8%	1.2	8	21
19120	Removal of breast lesion	5	28.2	0.5	10	24
19140	Removal of breast tissue	5	25.5	0.6	9	23
19240	Removal of breast	11	19.1	1.0	12	24
20220	Bone biopsy, trocar/needle	4	28.8	0.5	8	20
27590	Amputate leg at thigh	12	12.6	1.1	11	23
27880	Amputation of lower leg	11	11.0	1.1	10	23
31625	Bronchoscopy with biopsy	5	31.7	0.5	11	19
34101	Removal of artery clot	14	14.9	1.3	11	22
35081	Repair defect of artery	19	17.1	1.5	13	22
35301	Rechanneling of artery	15	17.1	1.4	11	22
35641	Artery bypass graft	16	13.8	1.4	11	22
36800	Insertion of cannula	5	23.7	0.7	7	20
36830	Artery-vein graft	8	14.7	1.0	8	19
38100	Removal of spleen, total	11	11.4	1.0	10	24
43832	Place gastrostomy tube	7	21.9	0.7	9	25
43840	Repair of stomach lesion	13	13.9	1.2	11	25
44120	Removal of small intestine	9	18.7	0.9	11	25
44140	Partial removal of colon	11	11.0	1.1	11	24
44143	Partial removal of colon	12	12.1	1.2	10	25
44150	Removal of colon	13	12.6	1.2	11	25
44160	Removal of colon	13	11.2	1.2	11	24

*Standard error is reported as a percent of the mean.

Table 4.3 (continued)

Survey estimates of later same day post- time
for surgical reference services: General Surgery

CPT-4	Description	Total Later Same Day Post Time (mins)		Later Same Day Post Visits		
		Mean	S.E*	Number	Duration (mins)	No. of responses
44950	Appendectomy	6	19.3%	0.8	8	25
45110	Removal of rectum	16	11.4	1.3	12	25
45378	Diagnostic colonoscopy	3	26.7	0.4	6	20
46260	Hemorrhoidectomy	6	25.9	0.6	9	24
47600	Removal of gallbladder	8	18.3	0.9	9	25
47605	Removal of gallbladder	8	18.6	0.9	10	25
47610	Removal of gallbladder	12	12.5	1.1	11	24
47620	Removal of gallbladder	13	13.1	1.1	11	25
48150	Partial removal of pancrea	21	12.4	1.5	14	24
49000	Exploration of abdomen	8	17.9	0.9	9	25
49421	Insert abdominal drain	6	24.0	0.8	8	22
49505	Repair inguinal hernia	4	26.8	0.5	8	24
55700	Biopsy of prostate	4	33.3	0.5	7	14
58150	Total hysterectomy	10	21.7	0.9	11	16
60220	Partial removal of thyroid	12	11.7	1.2	11	24
60500	Explore parathyroid glands	14	12.8	1.2	12	23

*Standard error is reported as a percent of the mean.

Table 4.3 (continued)

Survey estimates of later same day post- time
for surgical reference services: Neurosurgery

CPT-4	Description	Total Later Same Day Post Time (mins)		Later Same Day Post Visits		
		Mean	S.E*	Number	Duration (mins)	No. of responses
22554	Neck spine fusion	9	14.6%	1.1	8	16
22558	Lumbar spine fusion	9	15.1	1.0	9	14
35301	Rechanneling of artery	13	12.8	1.3	11	15
61154	Pierce skull, remove clot	11	13.7	1.1	10	16
61312	Open skull for drainage	13	10.9	1.2	11	16
61510	Removal of brain lesion	14	10.1	1.2	12	16
61512	Remove brain lining lesion	16	11.9	1.2	13	16
61518	Removal of brain lesion	18	11.7	1.4	13	16
61520	Removal of brain lesion	18	11.4	1.4	13	16
61700	Inner skull vessel surgery	19	10.0	1.5	12	16
63017	Removal of spinal lamina	9	14.1	1.1	8	16
63030	Low back disk surgery	9	12.3	1.0	8	16
63042	Low back disk surgery	9	12.3	1.0	8	16
63047	Removal of spinal lamina	9	12.3	1.0	8	16
63780	Insert spinal canal catheter	7	21.9	1.0	8	14
64721	Carpal tunnel surgery	4	22.5	0.7	6	16

*Standard error is reported as a percent of the mean.

Table 4.3 (continued)

Survey estimates of later same day post- time
for surgical reference services: Obstetrics & Gynecology

CPT-4	Description	Total Later Same Day Post Time (mins) Mean	S.E*	Later Same Day Post Visits Number	Duration (mins)	No. of responses
57240	Repair bladder & vagina	8	26.4%	0.7	11	16
57260	Repair of vagina	8	26.4	0.7	11	16
57280	Suspension of vagina	10	23.4	0.8	12	14
57520	Conization cervix	6	33.6	0.5	13	16
58120	Dilation and curettage (d&c)	4	34.5	0.4	10	17
58150	Total hysterectomy	13	11.7	1.0	13	16
58152	Total hysterectomy	13	11.7	1.0	13	16
58260	Vaginal hysterectomy	12	12.6	1.0	12	15
58720	Removal of ovary/tube(s)	12	11.2	1.0	12	16
58940	Removal of ovary(s)	11	11.5	1.0	11	16
58950	Resect ovarian malignancy	14	24.8	0.9	15	16
59410	Obstetrical care	8	28.0	0.7	11	15

*Standard error is reported as a percent of the mean.

Table 4.3 (continued)

Survey estimates of later same day post- time
for surgical reference services: Ophthalmology

CPT-4	Description	Total Later Same Day Post Time (mins)		Later Same Day Post Visits		
		Mean	S.E*	Number	Duration (mins)	No. of responses
65285	Repair of eye wound	11	23.9%	1.0	12	23
65855	Laser surgery of eye	7	25.8	0.8	9	22
66761	Revision of iris	4	27.5	0.5	8	23
66821	Lasering, secondary cataract	5	23.7	0.6	8	22
66983	Remove cataract, insert lens	4	37.6	0.3	11	21
66984	Remove cataract, insert lens	4	36.0	0.3	11	22
66985	Insert lens prosthesis	4	36.0	0.3	11	22
67010	Partial removal of eye fluid	4	36.2	0.4	10	21
67036	Removal of inner eye fluid	5	39.5	0.5	11	19
67107	Repair detached retina	8	41.6	0.7	10	17
67108	Repair detached retina	10	38.1	1.0	10	16
67227	Treatment of retinal lesion	4	41.9	0.4	11	16
67228	Treatment of retinal lesion	4	41.9	0.4	11	16

*Standard error is reported as a percent of the mean.

Table 4.3 (continued)

Survey estimates of later same day post- time
for surgical reference services: Orthopedic Surgery

CPT-4	Description	Total Later Same Day Post Time (mins)		Later Same Day Post Visits		
		Mean	S.E*	Number	Duration (mins)	No. of responses
23472	Reconstruct shoulder joint	11	15.9%	1.1	10	12
24515	Repair humerus fracture	11	14.7	1.1	10	13
25111	Remove wrist tendon lesion	3	35.5	0.3	8	13
25605	Treat fracture radius/ulna	4	34.7	0.5	8	13
25611	Repair fracture radius/ulna	5	34.1	0.6	8	12
26055	Incise finger tendon sheath	2	31.2	0.3	7	13
26115	Removal of hand lesion	2	38.9	0.3	8	11
27091	Removal of hip prosthesis	13	17.5	1.2	11	12
27125	Partial hip replacement	11	12.8	1.0	11	12
27130	Total hip replacement	12	14.7	1.1	11	12
27132	Total hip replacement	12	14.7	1.1	11	12
27230	Treat fracture of thigh	9	34.9	0.8	12	9
27236	Repair of thigh fracture	9	26.1	0.8	11	12
27244	Repair of thigh fracture	9	26.1	0.8	11	12
27310	Exploration of knee joint	7	34.5	0.7	10	12
27332	Removal of knee cartilage	3	43.8	0.4	10	11
27425	Lateral retinacular release	3	39.6	0.3	9	12
27447	Total knee replacement	11	14.0	1.1	11	12
27514	Repair of thigh fracture	11	14.0	1.1	11	12

*Standard error is reported as a percent of the mean.

Table 4.3 (continued)

Survey estimates of later same day post- time
for surgical reference services: Orthopedic Surgery

CPT-4	Description	Total Later Same Day Post Time (mins)		Later Same Day Post Visits		
		Mean	S.E*	Number	Duration (mins)	No. of responses
27524	Repair of kneecap fracture	4	39.3%	0.5	9	12
27814	Repair of ankle fracture	6	30.8	0.7	9	12
28292	Correction of bunion	4	39.5	0.4	9	12
29881	Knee arthroscopy/surgery	3	43.5	0.3	9	11
63017	Removal of spinal lamina	12	17.1	1.1	11	10
64721	Carpal tunnel surgery	2	38.3	0.3	8	12

*Standard error is reported as a percent of the mean.

Table 4.3 (continued)

Survey estimates of later same day post- time
for surgical reference services: Otolaryngology

CPT-4	Description	Total later same day post time (mins) Mean	S.E*	Later same day post visits Number	Duration (mins)	No. of responses
30520	Repair of nasal septum	7	27.0%	0.8	8	10
31201	Removal of ethmoid sinus	7	28.3	0.8	9	10
31225	Removal of upper jaw	16	11.9	1.2	13	10
31255	Removal of ethmoid sinus	7	35.5	0.8	9	10
31360	Removal of larynx	21	18.4	1.4	15	10
31535	Operative laryngoscopy	6	29.9	0.8	8	10
31541	Operative laryngoscopy	7	29.2	0.8	8	10
31603	Incision of windpipe	13	20.8	1.2	11	10
41120	Partial removal of tongue	15	9.3	1.2	13	10
41155	Tongue, jaw, & neck surgery	24	13.0	1.6	15	10
42415	Excise parotid gland/lesion	11	16.8	1.0	11	10
42420	Excise parotid gland/lesion	11	15.7	1.0	11	10
42440	Excision submaxillary gland	7	29.5	0.8	8	10
69631	Repair eardrum structures	6	31.8	0.8	8	10
69632	Rebuild eardrum structures	6	31.8	0.8	8	10
69633	Rebuild eardrum structures	6	32.0	0.8	8	10
69641	Revise middle ear & mastoid	7	29.7	0.8	8	10
69642	Revise middle ear & mastoid	7	29.7	0.8	8	10

*Standard error is reported as a percent of the mean.

Table 4.3 (continued)

Survey estimates of later same day post- time
for surgical reference services: Cardiothoracic Surgery

CPT-4	Description	Total later same day post time (mins)		Later same day post visits		
		Mean	S.E*	Number	Duration (mins)	No. of responses
31603	Incision of windpipe	8	27.5%	1.2	7	13
32000	Drainage of chest	7	25.5	0.9	7	13
32020	Insertion of chest tube	7	28.2	1.0	7	13
32100	Exploration/biopsy of chest	13	12.3	1.6	8	13
32480	Partial removal of lung	15	12.7	1.7	9	13
32500	Partial removal of lung	13	22.1	1.6	8	12
33010	Drainage of heart sac	8	24.6	1.0	8	13
33206	Insertion of heart pacemaker	9	28.0	1.0	8	12
33207	Insertion of heart pacemaker	9	28.0	1.0	8	12
33405	Replacement of aortic valve	24	13.9	2.0	12	13
33425	Repair of mitral valve	24	13.9	2.0	12	13
33430	Replacement of mitral valve	24	13.9	2.0	12	13
33500	Repair heart vessel fistula	23	16.7	1.9	12	12
33510	Coronary artery bypass	22	13.1	2.0	11	13
33512	Coronary arteries bypass	23	13.3	1.9	12	13
33514	Coronary arteries bypass	24	14.4	2.0	12	13
33870	Transverse aortic arch graft	30	19.6	2.4	12	13
35081	Repair defect of artery	18	20.2	1.5	12	8
35301	Rechanneling of artery	15	19.5	1.6	10	8
39010	Exploration of chest	10	28.2	1.1	8	13
39020	Exploration of chest	12	17.7	1.4	9	13
39400	Visualization of chest	8	31.3	1.0	8	11

*Standard error is reported as a percent of the mean.

Table 4.3 (continued)

Survey estimates of later same day post- time
for surgical reference services: Urology

CPT-4	Description	Total later same day post time (mins)		Later same day post visits		
		Mean	S.E*	Number	Duration (mins)	No. of responses
50220	Removal of kidney	13	11.1%	1.2	11	21
50230	Removal of kidney	15	13.1	1.3	12	21
50236	Removal of kidney & ureter	13	12.0	1.2	11	21
50590	Fragmenting of kidney stone	5	32.7	0.5	10	20
50780	Reimplant ureter in bladder	13	13.3	1.2	11	21
51590	Remove bladder; revise tract	20	15.1	1.5	13	21
51595	Remove bladder; revise tract	20	15.5	1.5	13	21
52332	Cystoscopy and treatment	5	26.6	0.6	8	22
52336	Cystoscopy, stone removal	8	24.0	0.8	9	22
52601	Prostatectomy (turp)	14	12.8	1.3	11	21
54161	Circumcision	3	28.3	0.4	8	21
54400	Insert semi-rigid prosthesis	6	30.4	0.7	8	20
54520	Removal of testis	4	27.0	0.5	8	21
54640	Suspension of testis	5	28.3	0.7	8	20
55821	Removal of prostate	16	12.8	1.3	12	21
55831	Removal of prostate	15	13.0	1.3	12	21
55845	Extensive prostate surgery	16	13.2	1.3	12	21

*Standard error is reported as a percent of the mean.

Table 4.4

Survey estimates of intra-service time for surgical reference services: Oral & maxillofacial surgery

Cpt-4	Description	Intra-service time (mins) Mean	S.E*	No. of responses
21030	Removal of face bone lesion	51	7.7%	24
21040	Removal of jaw bone lesion	37	5.3	24
21041	Removal of jaw bone lesion	82	8.5	24
21110	Interdental fixation	62	5.9	24
21210	Face bone graft	131	4.5	24
21215	Lower jaw bone graft	155	5.8	24
21240	Reconstruction of jaw joint	137	5.6	24
21248	Reconstruction of jaw	76	6.8	22
21249	Reconstruction of jaw	145	6.8	22
21310	Treatment of nose fracture	29	11.7	19
21315	Treatment of nose fracture	34	11.0	19
21365	Repair cheek bone fracture	138	6.8	24
21462	Repair lower jaw fracture	107	6.3	24
21470	Repair lower jaw fracture	177	4.1	24
21480	Reset dislocated jaw	20	8.0	24
21485	Reset dislocated jaw	50	7.3	24

*Standard error is reported as a percent of the mean.

Table 4.5

Survey estimates of pre- and immediate pre- and post-service time for surgical reference services: Oral & maxillofacial surgery

CPT-4	Description	Pre-service time (mins) before O.R. entry		Immediate pre-op time (mins)		Immediate post-op time (mins)		No. of responses
		Mean	S.E*	Mean	S.E*	Mean	S.E*	
21030	Removal of face bone lesion	22	9.8%	23	8.7%	28	10.5%	24
21041	Removal of jaw bone lesion	25	11.2	25	9.7	31	12.5	24
21210	Face bone graft	28	12.4	32	7.8	35	12.2	22
21215	Lower jaw bone graft	30	12.5	33	7.0	35	11.7	23
21240	Reconstruction of jaw joint	30	12.7	31	7.0	31	10.9	24
21365	Repair cheek bone fracture	32	11.0	33	7.2	35	12.6	24
21462	Repair lower jaw fracture	25	11.7	28	8.4	28	12.7	24
21470	Repair lower jaw fracture	37	14.3	33	6.9	34	12.7	24
21040	Removal of jaw bone lesion	20	17.6	—[a]	—[a]	24[b]	14.2	11
21110	Interdental fixation	21	16.3	—[a]	—[a]	25[b]	16.0	10
21248	Reconstruction of jaw	30	23.5	—[a]	—[a]	24[b]	18.4	10
21249	Reconstruction of jaw	32	23.1	—[a]	—[a]	24[b]	18.4	10
21485	Reset dislocated jaw	20	17.4	—[a]	—[a]	25[b]	13.4	11
21310	Treatment of nose fracture	18	13.9	—[a]	—[a]	15[b]	30.9	12
21315	Treatment of nose fracture	18	13.9	—[a]	—[a]	15[b]	31.4	12
21480	Reset dislocated jaw	15	21.1	—[a]	—[a]	15[b]	17.4	13

*Standard error is reported as a percent of the respective mean.

[a] pre-service time of these office based services was measured as a single estimate including both pre- and immediate pre-service time.

[b] same day post service time of these office based services was measured as a single estimate including both immediate post-op and later same day post time.

Table 4.6

Survey estimates of later same day post- time for surgical reference services: Oral & maxillofacial surgery

		Total later same day post time (mins)		later same day post visits		
CPT-4	Description	Mean	S.E*	Number	Duration (mins)	No. of responses
21030	Removal of face bone lesion	13	11.5%	1.1	12	21
21041	Removal of jaw bone lesion	14	10.5	1.1	12	21
21210	Face bone graft	15	9.5	1.0	15	21
21215	Lower jaw bone graft	16	12.0	1.1	15	22
21240	Reconstruction of jaw joint	12	21.2	0.8	15	23
21365	Repair cheek bone fracture	18	8.3	1.0	17	23
21462	Repair lower jaw fracture	15	10.8	1.1	14	23
21470	Repair lower jaw fracture	18	10.1	1.0	17	23

*Standard error is reported as a percent of the mean.

Table 4.7

Survey estimates of post-service hospital time for surgical reference services: Oral & maxillofacial surgery

CPT-4	Description	Total hospital time (mins)		Hospital visits			
		Mean	S.E*	Number	Duration (mins)	No. of ICU visits	No. of responses
21030	Removal of face bone lesion	14	27.5%	0.9	15	0.0	21
21041	Removal of jaw bone lesion	27	19.0	1.9	14	0.0	22
21210	Face bone graft	35	18.4	2.2	16	0.0	21
21215	Lower jaw bone graft	42	16.4	2.6	16	0.0	22
21240	Reconstruction of jaw joint	30	18.0	2.0	15	0.0	21
21365	Repair cheek bone fracture	48	11.5	3.0	16	0.0	23
21462	Repair lower jaw fracture	32	17.0	2.1	15	0.0	22
21470	Repair lower jaw fracture	53	16.0	3.3	16	1.0	24

*Standard error is reported as a percent of the mean.

Table 4.8

Survey estimates of post-service office time for surgical reference services: Oral & maxillofacial surgery

CPT-4	Description	Total office time (mins)		Office visits		
		Mean	S.E*	Number	Duration (mins)	No. of Responses
21030	Removal of face bone lesion	45	11.8%	3.5	12	23
21041	Removal of jaw bone lesion	65	13.0	4.6	14	23
21210	Face bone graft	73	11.6	5.2	14	21
21215	Lower jaw bone graft	90	8.1	6.4	14	22
21240	Reconstruction of jaw joint	114	13.0	7.1	16	23
21365	Repair cheek bone fracture	88	11.7	6.3	14	23
21462	Repair lower jaw fracture	92	8.1	6.1	15	23
21470	Repair lower jaw fracture	119	9.0	7.4	16	24
21040	Removal of jaw bone lesion	57	10.7	4.1	14	11
21110	Interdental fixation	81	15.3	4.8	17	10
21248	Reconstruction of jaw	70	9.3	5.0	14	10
21249	Reconstruction of jaw	76	10.6	5.4	14	10
21485	Reset dislocated jaw	47	17.7	3.1	15	11
21310	Treatment of nose fracture	21	19.8	1.6	12	12
21315	Treatment of nose fracture	24	16.6	1.8	12	12
21480	Reset dislocated jaw	24	12.1	1.7	14	13

*Standard error is reported as a percent of the mean.

Table 4.9

Results of regression model for immediate pre- and post-operative time and later same day post time

Dependent Variable:	Immediate pre- and post-operative time	Later same day post time
Variable	Coefficient	Coefficient
Constant	0.920*	0.314*
Intra-Time	0.337*	0.316*
Dhvis	0.093*	0.108*
Dicuvis	0.058*	0.117*
Office Visits	0.022	-0.170*
Adjusted R^2	0.732	0.675
Root of mean squared errors	0.084	0.105
Observations	140	140

* $p < .01$

Note: The presence of hospital visits (Dhvis) and ICU visits (Dicuvis) were used as dummy variables. The variables equal 1 if a visit is provided, 0 if not. Continuous variables were transformed using common logarithms for the regression analysis.

Variable Key:

Intra-Time = intra-service time
Dhvis = dummy variable, 1 if post-operative hospital visit involved, else 0.
Dicuvis = dummy variable, 1 if post-operative ICU visit involved, else 0.
Office Visits = number of post-operative office visits for the service.

Table 4.10

Summary of final data elements for selected surgical reference services: Dermatology

CPT	Pack	Description	Statistic	Time in minutes: Pre-before O.R. entry	Intra	Immediate pre/post	Later same day post: Visits	Type[a]	Hospital post-op: Hospital visits	Type[a]	ICU visits	Office post-op: Visits	Type[a]
14040	090	Skin tissue rearrangement	Mean	32*	92	26*	1.0*	10	1.5	15	0.0	4.2	15
		MFS93 Total Work = 713	StdErr	.	5.7	.	.		65.6			14.5	
			N	.	128	.	.		15			15	
13132	010	Repair of wound or lesion	Mean	18	50	22	NA		0.0	--	0.0	1.0	10
		MFS93 Total Work = 419	StdErr	6.5	4.2	5.2			0.0			5.0	
			N	114	102	11.5			106			106	
11441	010	Removal of skin lesion	Mean	5	19	5	NA		0.0	--	0.0	1.0	10
		MFS93 Total Work = 155	StdErr	11.8	4.9	11.8			0.0			13.0	
			N	14	259	14			75			75	
11640	010	Removal of skin lesion	Mean	6	15	6	NA		0.0	--	0.0	1.0	10
		MFS93 Total Work = 147	StdErr	9.8	7.4	9.8			0.0			31.2	
			N	15	78	15			15			15	
11100	000	Biopsy of skin lesion	Mean	5	12	5	NA		NA		NA	NA	
		MFS93 Total Work = 80	StdErr	15.5	5.6	15.5							
			N	18	252	18							
11050	000	Trim skin lesion	Mean	3	9	3	NA		NA		NA	NA	
		MFS93 Total Work = 43	StdErr	14.3	8.2	14.3							
			N	13	15	13							

[a] The type of visit is measured by minutes in increments of five.
* Time or visit estimate obtained from prediction rather than survey.

Table 4.10 (continued)

Summary of final data elements for selected surgical reference services: Gastroenterology

				Time in minutes									
				Pre-before O.R. entry	Intra	Immediate pre/post	Later same day post		Hospital post-op			Office post-op	
CPT	Pack	Description	Statistic				Visits	Type[a]	Hospital visits	Type[a]	ICU visits	Visits	Type[a]
43260	000	Endoscopy,bile duct/pancreas	Mean	22	48	31*	0.5*	10	NA		NA	NA	
		MFS93 Total Work = 592	StdErr	5.6	5.0	.	.						
			N	93	90	.	.						
45385	000	Colonoscopy, lesion removal	Mean	17	53	32*	0.5*	5	NA		NA	NA	
		MFS93 Total Work = 516	StdErr	7.8	4.9	.	.						
			N	39	161	.	.						
45380	000	Colonoscopy and biopsy	Mean	16	42	29*	0.5*	5	NA		NA	NA	
		MFS93 Total Work = 397	StdErr	9.9	3.5	.	.						
			N	21	107	.	.						
45378	000	Diagnostic colonoscopy	Mean	20	39	29*	0.5*	5	NA		NA	NA	
		MFS93 Total Work = 367	StdErr	5.4	4.5	.	.						
			N	112	157	.	.						
43235	000	Upper GI endoscopy, diagnosis	Mean	18	29	26*	0.5*	5	NA		NA	NA	
		MFS93 Total Work = 237	StdErr	5.7	7.1	.	.						
			N	112	128	.	.						
45305	000	Proctosigmoidoscopy; biopsy	Mean	5	16	5	NA		NA		NA	NA	
		MFS93 Total Work = 100	StdErr	13.4	5.2	9.9							
			N	19	19	19							

[a] The type of visit is measured by minutes in increments of five.
* Time or visit estimate obtained from prediction rather than survey.

Table 4.10 (continued)

Summary of final data elements for selected surgical reference services: General Surgery

				Time in minutes									
				Pre-before O.R. entry	Intra	Immediate pre/post	Later same day post		Hospital post-op			Office post-op	
CPT	Pack	Description	Statistic				Visits	Type[a]	Hospital visits	Type[a]	ICU visits	Visits	Type[a]
48150	090	Partial removal of pancreas	Mean	45	309	78	1.5	15	16.0	15	2.0	5.0	15
		MFS93 Total Work = 2999	StdErr	32.3	5.5	12.1	12.4		19.9			23.2	
			N	12	12	24	24		12			12	
45110	090	Removal of rectum	Mean	37	194	72	1.5	10	13.0	10	1.0	5.5	15
		MFS93 Total Work = 2152	StdErr	15.1	3.0	11.1	11.4		15.1			15.0	
			N	25	97	25	25		25			25	
44140	090	Partial removal of colon	Mean	33	104	58	1.0	10	8.5	10	0.0	3.5	10
		MFS93 Total Work = 1696	StdErr	16.5	3.3	11.4	11.0		16.1			16.9	
			N	26	99	25	24		26			26	
44120	090	Removal of small intestine	Mean	31	95	53	1.0	10	8.5	10	0.0	3.0	10
		MFS93 Total Work = 1306	StdErr	16.3	3.0	13.0	18.7		15.6			13.3	
			N	26	98	25	25		26			26	
38100	090	Removal of spleen, total	Mean	32*	91	53	1.0	10	6.0	10	0.0	3.0*	10
		MFS93 Total Work = 1190	StdErr	.	3.4	12.1	11.4		8.8			.	
			N	.	98	25	24		103			.	
47600	090	Removal of gallbladder	Mean	22	64	46	1.0	10	4.0	10	0.0	2.5*	10
		MFS93 Total Work = 1060	StdErr	8.7	3.3	14.5	18.3		9.6			.	
			N	94	197	25	25		134			.	
49505	090	Repair inguinal hernia	Mean	22	48	37	0.5	10	1.0	10	0.0	2.0	10
		MFS93 Total Work = 612	StdErr	9.9	3.4	15.9	26.8		29.1			16.4	
			N	60	274	24	24		63			22	
44950	090	Appendectomy	Mean	31	37	40	1.0	10	2.5	10	0.0	2.0*	10
		MFS93 Total Work = 602	StdErr	7.3	5.4	14.0	19.3		15.7			.	
			N	38	146	25	25		36			.	

[a] The type of visit is measured by minutes in increments of five.
* Time or visit estimate obtained from prediction rather than survey.

Table 4.10 (continued)

Summary of final data elements for selected surgical reference services: Neurosurgery

				Time in minutes										
				Pre-before O.R.			Later same day post		Hospital post-op			Office post-op	
CPT	Pack	Description	Statistic	entry	Intra	Immediate pre/post	Visits	Type[a]	Hospital visits	Type[a]	ICU visits	Visits	Type[a]
61700	090	Inner skull vessel surgery	Mean	57	280	74	1.5	10	12.0	15	1.0	3.0	15
		MFS93 Total Work = 3458	StdErr	13.5	3.2	11.1	10.0		14.8			14.7	
			N	18	108	16	16		18			18	
61518	090	Removal of brain lesion	Mean	49	299	79	1.5	10	11.0	15	1.0	3.0	15
		MFS93 Total Work = 3204	StdErr	14.9	3.7	12.5	11.7		12.1			14.3	
			N	18	108	16	16		18			18	
61312	090	Open skull for drainage	Mean	42	150	58	1.0	10	10.5	15	1.0	2.5	15
		MFS93 Total Work = 2039	StdErr	13.6	4.1	10.9	10.9		7.0			12.5	
			N	18	111	16	16		123			18	
63042	090	Low back disk surgery	Mean	35	159	50	1.0	10	6.5	10	0.0	2.5	15
		MFS93 Total Work = 1714	StdErr	13.7	3.3	11.3	12.3		12.8			11.5	
			N	18	199	16	16		18			18	
63017	090	Removal of spinal lamina	Mean	36	168	60	1.0	10	7.0	10	0.0	3.0	15
		MFS93 Total Work = 1574	StdErr	9.7	3.0	10.7	14.1		6.7			8.2	
			N	38	278	26	26		72			38	
63030	090	Low back disk surgery	Mean	33	91	48	1.0	10	5.5	10	0.0	2.5	15
		MFS93 Total Work = 1202	StdErr	12.6	3.7	13.0	12.3		6.3			11.5	
			N	18	292	16	16		103			18	
64721	090	Carpal tunnel surgery	Mean	22	35	36	0.5	10	0.0	--	0.0	3.5	10
		MFS93 Total Work = 395	StdErr	7.5	4.4	11.0	22.5		0.0			6.9	
			N	179	529	28	28		135			135	

[a] The type of visit is measured by minutes in increments of five.
* Time or visit estimate obtained from prediction rather than survey.

Table 4.10 (continued)

Summary of final data elements for selected surgical reference services: Obstetrics and gynecology

				Time in minutes										
				Pre-before O.R. entry	Intra	Immediate pre/post	Later same day post		Hospital post-op			Office post-op	
CPT	Pack	Description	Statistic				Visits	Type[a]	Hospital visits	Type[a]	ICU visits	Visits	Type[a]
58150	090	Total hysterectomy	Mean	35	89	47	1.0	10	4.5	15	0.0	2.5	15
		MFS93 Total Work = 1290	StdErr	15.0	4.1	16.0	11.7		5.6			12.9	
			N	19	176	33	32		136			19	
59410	MMM	Obstetrical care	Mean	20*	35	41	1.0	10	2.0	15	0.0	1.5	15
		MFS93 Total Work = 1214	StdErr	.	6.7	19.6	28.0		16.7			15.2	
			N	.	157	15	15		14			14	
58260	090	Vaginal hysterectomy	Mean	30	70	42	1.0	10	4.0	10	0.0	2.0	15
		MFS93 Total Work = 1131	StdErr	19.8	10.3	17.4	12.6		16.7			8.9	
			N	16	17	16	15		16			16	
58940	090	Removal of ovary(s)	Mean	22	54	42	1.0	10	3.5	10	0.0	2.0	15
		MFS93 Total Work = 649	StdErr	15.6	7.6	15.5	11.5		14.0			9.6	
			N	14	14	17	16		14			14	
58720	090	Removal of ovary/tube(s)	Mean	22	52	41	1.0	10	3.0	10	0.0	2.0	15
		MFS93 Total Work = 615	StdErr	18.9	5.6	16.0	11.2		16.4			11.1	
			N	16	17	17	16		16			16	
58120	010	Dilation and curettage (D&C)	Mean	22	13	29	0.5	5	0.0	--	0.0	1.0	5
		MFS93 Total Work = 243	StdErr	7.9	5.0	22.0	34.5		0.0			9.5	
			N	118	89	17	17		117			117	

[a] The type of visit is measured by minutes in increments of five.
* Time or visit estimate obtained from prediction rather than survey.

Table 4.10 (continued)

Summary of final data elements for selected surgical reference services: Ophthalmology

				Time in minutes										
				Pre-before O.R.		Immediate	Later same day post		Hospital post-op			Office post-op	
CPT	Pack	Description	Statistic	entry	Intra	pre/post	Visits	Type[a]	Hospital visits	Type[a]	ICU visits	Visits	Type[a]
67107	090	Repair detached retina	Mean	27	107	41	1.0	10	1.0	20	0.0	4.5	20
		MFS93 Total Work = 1390	StdErr	22.5	4.3	8.8	41.6		29.3			8.0	
			N	14	152	17	17		49			49	
67228	090	Treatment of retinal lesion	Mean	19	69	25	0.5	10	0.0	--	0.0	3.5	15
		MFS93 Total Work = 1230	StdErr	7.4	6.4	12.1	41.9		0.0			7.5	
			N	80	187	16	16		79			79	
66984	090	Remove cataract, insert lens	Mean	25	54	34	0.5	10	0.0	--	0.0	5.5	15
		MFS93 Total Work = 982	StdErr	5.2	4.1	8.8	36.0		0.0			4.2	
			N	280	346	23	22		285			285	
66985	090	Insert lens prosthesis	Mean	25	40	33	0.5	10	0.0	--	0.0	5.0	15
		MFS93 Total Work = 784	StdErr	5.9	4.9	8.3	36.0		0.0			5.5	
			N	190	297	23	22		195			195	
65855	090	Laser surgery of eye	Mean	18	23	19	1.0	10	0.0	--	0.0	3.0	15
		MFS93 Total Work = 461	StdErr	7.1	6.5	9.3	25.8		0.0			5.4	
			N	132	201	22	22		132			132	
66761	090	Revision of iris	Mean	20	21	18	0.5	5	0.0	--	0.0	3.0	15
		MFS93 Total Work = 374	StdErr	8.6	7.1	9.3	27.5		0.0			6.6	
			N	86	206	22	23		90			90	
68840	010	Explore/irrigate tear ducts	Mean	7	13	7	NA		0.0	--	0.0	0.5	10
		MFS93 Total Work = 121	StdErr	12.7	11.1	12.7			.			32.3	
			N	22	13	22			.			23	

[a] The type of visit is measured by minutes in increments of five.
* Time or visit estimate obtained from prediction rather than survey.

Table 4.10 (continued)

Summary of final data elements for selected surgical reference services: Orthopedic Surgery

				Time in minutes										
				Pre-before O.R. entry	Intra	Immediate pre/post	Later same day post		Hospital post-op			Office post-op	
CPT	Pack	Description	Statistic				Visits	Type[a]	Hospital visits	Type[a]	ICU visits	Visits	Type[a]
27447	090	Total knee replacement	Mean	30	139	57	1.0	10	10.0	10	0.0	4.0	15
		MFS93 Total Work = 1955	StdErr	15.8	2.2	12.4	14.0		5.5			8.1	
			N	14	149	12	12		87			14	
27130	090	Total hip replacement	Mean	31	128	59	1.0	10	9.0	10	0.0	3.5	10
		MFS93 Total Work = 1855	StdErr	11.7	3.0	14.6	14.7		8.6			6.9	
			N	26	104	12	12		71			26	
63017	090	Removal of spinal lamina	Mean	36	168	60	1.0	10	7.0	10	0.0	3.0	15
		MFS93 Total Work = 1574	StdErr	9.7	3.0	10.7	17.1		6.7			8.2	
			N	38	278	26	26		72			38	
27244	090	Repair of thigh fracture	Mean	32	79	64	1.0	10	10.0	10	0.0	4.0	10
		MFS93 Total Work = 1349	StdErr	23.7	3.6	15.4	26.1		7.6			12.6	
			N	14	259	12	12		136			14	
24515	090	Repair humerus fracture	Mean	24	106	56	1.0	10	3.0	10	0.0	5.0	10
		MFS93 Total Work = 1084	StdErr	12.5	4.0	11.6	14.7		25.8			16.0	
			N	13	76	13	13		13			13	
29881	090	Knee arthroscopy/surgery	Mean	26	66	46	0.5	10	0.0	--	0.0	3.0	15
		MFS93 Total Work = 740	StdErr	8.7	3.3	12.1	43.5		0.0			10.8	
			N	58	247	11	11		12			12	
25605	090	Treat fracture radius/ulna	Mean	22	35	34	0.5	5	0.0	--	0.0	5.0	15
		MFS93 Total Work = 538	StdErr	5.4	3.6	17.6	34.7		0.0			5.8	
			N	84	153	13	13		78			78	
64721	090	Carpal tunnel surgery	Mean	22	35	36	0.5	10	0.0	--	0.0	3.5	10
		MFS93 Total Work = 395	StdErr	7.5	4.4	11.0	22.5		0.0			6.9	
			N	179	529	28	28		135			135	

[a] The type of visit is measured by minutes in increments of five.
* Time or visit estimate obtained from prediction rather than survey.

Table 4.10 (continued)

Summary of final data elements for selected surgical reference services: Otolaryngology

				Time in minutes										
							Later same day post		Hospital post-op			Office post-op		
CPT	Pack	Description	Statistic	Pre-before O.R. entry	Intra	Immediate pre/post	Visits	Type[a]	Hospital visits	Type[a]	ICU visits	Visits	Type[a]
41155	090	Tongue, jaw, & neck surgery	Mean	36	326	74	1.5	10	13.0	15	2.0	5.5	15
		MFS93 Total Work = 2323	StdErr	14.1	3.3	10.5	13.0		18.1			14.5	
			N	15	15	10	10		15			15	
42420	090	Excise parotid gland/lesion	Mean	32	182	46	1.0	10	4.0	10	0.0	3.5	10
		MFS93 Total Work = 1850	StdErr	15.4	5.5	15.8	15.7		17.9			11.7	
			N	13	15	10	10		13			13	
41120	090	Partial removal of tongue	Mean	26	73	46	1.0	10	5.0	10	0.0	4.0	10
		MFS93 Total Work = 877	StdErr	12.0	11.2	12.7	9.3		24.4			12.6	
			N	15	15	10	10		14			14	
30520	090	Repair of nasal septum	Mean	22	58	39	1.0	10	0.0	--	0.0	3.0	10
		MFS93 Total Work = 550	StdErr	16.5	6.7	14.9	27.0		0.0			21.1	
			N	15	16	10	10		15			15	
31603	000	Incision of windpipe	Mean	7	23	30	1.0	10	NA		NA	NA	
		MFS93 Total Work = 413	StdErr	11.0	7.1	25.7	20.8						
			N	104	298	10	10						
31535	000	Operative laryngoscopy	Mean	20	24	30	0.5	5	NA		NA	NA	
		MFS93 Total Work = 314	StdErr	18.0	4.4	18.4	29.9						
			N	12	102	10	10						
31575	000	Diagnostic laryngoscopy	Mean	6	14	6	NA		NA		NA	NA	
		MFS93 Total Work = 109	StdErr	18.0	9.1	18.0							
			N	12	15	12							

[a] The type of visit is measured by minutes in increments of five.
* Time or visit estimate obtained from prediction rather than survey.

Table 4.10 (continued)

Summary of final data elements for selected surgical reference services: Cardiothoracic Surgery

				Time in minutes										
				Pre-before O.R.		Immediate	Later same day post		Hospital post-op			Office post-op	
CPT	Pack	Description	Statistic	entry	Intra	pre/post	Visits	Type[a]	Hospital visits	Type[a]	ICU visits	Visits	Type[a]
33405	090	Replacement of aortic valve	Mean	36	186	86	2.0	10	10.0	15	3.0	1.5	20
		MFS93 Total Work = 2827	StdErr	11.7	3.0	12.7	13.9		7.9			12.2	
			N	24	81	13	13		52			24	
33512	090	Coronary arteries bypass	Mean	45	200	81	2.0	10	9.0	15	2.0	1.5	20
		MFS93 Total Work = 2626	StdErr	11.7	2.7	14.5	13.3		9.8			13.7	
			N	24	80	14	13		79			24	
33425	090	Repair of mitral valve	Mean	42	217	87	2.0	10	9.0	15	3.0	1.5	20
		MFS93 Total Work = 2538	StdErr	13.5	6.9	13.0	13.9		17.1			20.6	
			N	12	12	13	13		11			12	
35081	090	Repair defect of artery	Mean	29	167	77	1.5	10	10.0	10	2.0	1.5	20
		MFS93 Total Work = 2200	StdErr	35.6	3.3	11.0	15.1		8.1			19.8	
			N	15	81	30	30		41			15	
32480	090	Partial removal of lung	Mean	32	131	61	1.5	10	9.5	10	2.0	1.5	20
		MFS93 Total Work = 1730	StdErr	16.1	3.4	20.9	12.7		7.1			12.9	
			N	22	91	14	13		56			22	
35301	090	Rechanneling of artery	Mean	36	120	61	1.5	10	5.0	10	1.0	1.5	15
		MFS93 Total Work = 1608	StdErr	12.9	5.0	10.0	12.0		9.8			10.4	
			N	31	155	45	45		57			31	
32020	000	Insertion of chest tube	Mean	14	24	31	1.0	10	NA		NA	NA	
		MFS93 Total Work = 394	StdErr	17.7	5.3	17.4	28.2						
			N	34	370	14	13						
32000	000	Drainage of chest	Mean	10	28	20	1.0	5	NA		NA	NA	
		MFS93 Total Work = 153	StdErr	17.1	4.2	18.1	25.5						
			N	10	359	14	13						

[a] The type of visit is measured by minutes in increments of five.
* Time or visit estimate obtained from prediction rather than survey.

Table 4.10 (continued)

Summary of final data elements for selected surgical reference services: Urology

				Time in minutes										
				Pre-before O.R.		Immediate	Later same day post		Hospital post-op			Office post-op	
CPT	Pack	Description	Statistic	entry	Intra	pre/post	Visits	Type[a]	Hospital visits	Type[a]	ICU visits	Visits	Type[a]
51595	090	Remove bladder; revise tract	Mean	54	328	74	1.5	15	15.0	15	2.0	3.5	20
		MFS93 Total Work = 3401	StdErr	22.5	2.3	9.5	15.5		9.9			9.5	
			N	27	112	21	21		27			26	
50236	090	Removal of kidney & ureter	Mean	39	214	59	1.5	10	8.5	10	0.0	2.5	15
		MFS93 Total Work = 2316	StdErr	9.5	8.0	9.8	12.0		11.6			15.2	
			N	19	14	22	21		19			19	
55821	090	Removal of prostate	Mean	32	102	54	1.5	10	7.0	10	0.0	2.5	10
		MFS93 Total Work = 1290	StdErr	21.1	9.6	10.5	12.8		22.0			19.8	
			N	14	14	22	21		14			14	
52601	090	Prostatectomy (turp)	Mean	32	62	45	1.0	10	4.0	10	0.0	2.5	15
		MFS93 Total Work = 1143	StdErr	13.4	2.7	10.4	12.8		5.1			14.9	
			N	28	114	22	21		142			27	
52336	000	Cystoscopy, stone removal	Mean	30	75	38	1.0	10	NA		NA	NA	
		MFS93 Total Work = 683	StdErr	12.1	4.1	11.8	24.0						
			N	27	112	22	22						

[a] The type of visit is measured by minutes in increments of five.
* Time or visit estimate obtained from prediction rather than survey.

Table 4.11

A comparison of intra-service time with operating room time from different data sources

CPT code	Description	Intra-service time (mins) Hosp A[1]	Hosp B[1]	Hosps C[2]	Hosps D[3]	Battelle study[4]	RBRVS[5]
15100	Split skin graft procedure	40 (144)	43 (160)	26 (11)	53 (31)	.	73
19120	Removal of breast lesion	33 (151)	26 (1373)	32 (133)	22 (682)	.	35
19240	Removal of breast	111 (299)	139 (277)	97 (99)	69 (44)	110 (203)	104
27130	Total hip replacement	108 (228)	156 (413)	.	136 (136)	163 (164)	128
27244	Repair of thigh fracture	90 (141)	122 (102)	123 (7)	81 (124)	110 (84)	79
27447	Total knee replacement	122 (193)	135 (681)	150 (10)	148 (155)	150 (445)	139
27590	Amputate leg at thigh	85 (122)	.	47 (8)	56 (17)	.	69

Note: The number of cases is shown in parentheses below the intra-service times.

[1] Median skin-to-skin time, teaching hospital, two years of data: 1988 and 1989.
[2] Mean skin-to-skin time, teaching cases, system of nine hospitals, 1987.
[3] Mean skin-to-skin time, non-teaching cases, system of nine hospitals, 1987.
[4] Median skin-to-skin time, sixteen hospitals of varying characteristics, 1986.
[5] Mean intra-service time from the RBRVS study.

Table 4.11 (continued)

A comparison of intra-service time with operating room time from different data sources

CPT code	Description	Intra-service time (mins) Hosp A[1]	Hosp B[1]	Hosps C[2]	Hosps D[3]	Battelle study[4]	RBRVS[5]
31525	Diagnostic laryngoscopy	30 (125)	36 (10)	.	9 (61)	.	19
31600	Incision of windpipe	39 (242)	45 (45)	27 (13)	20 (47)	.	33
32480	Partial removal of lung	187 (108)	167 (86)	130 (12)	97 (6)	.	131
33512	Coronary arteries bypass	195 (284)	193 (541)	211 (59)	209 (65)	255 (52)	200
35301	Rechanneling of artery	149 (195)	105 (148)	90 (23)	80 (100)	150 (177)	120
44005	Freeing of bowel adhesion	104 (101)	74 (46)	71 (14)	38 (28)	.	80
44140	Partial removal of colon	185 (311)	135 (19)	108 (43)	83 (35)	135 (158)	104

Note: The number of cases is shown in parentheses below the intra-service times.

[1] Median skin-to-skin time, teaching hospital, two years of data: 1988 and 1989.
[2] Mean skin-to-skin time, teaching cases, system of nine hospitals, 1987.
[3] Mean skin-to-skin time, non-teaching cases, system of nine hospitals, 1987.
[4] Median skin-to-skin time, sixteen hospitals of varying characteristics, 1986.
[5] Mean intra-service time from the RBRVS study.

Table 4.11 (continued)

A comparison of intra-service time with operating room time from different data sources

CPT code	Description	Intra-service time (mins) Hosp A[1]	Hosp B[1]	Hosps C[2]	Hosps D[3]	Battelle study[4]	RBRVS[5]
44145	Partial removal of colon	262 (95)	180 (12)	110 (1)	130 (2)	.	155
44950	Appendectomy	64 (273)	50 (305)	45 (247)	34 (856)	.	37
45110	Removal of rectum	289 (38)	147 (6)	187 (10)	122 (44)	.	194
47600	Removal of gallbladder	82 (273)	96 (272)	72 (211)	41 (481)	110 (225)	64
47605	Removal of gallbladder	100 (459)	120 (170)	.	.	.	82
49000	Exploration of abdomen	65 (295)	49 (47)	58 (31)	44 (41)	.	66
49505	Repair inguinal hernia	70 (525)	70 (293)	.	38 (171)	66 (158)	48

Note: The number of cases is shown in parentheses below the intra-service times.

[1] Median skin-to-skin time, teaching hospital, two years of data: 1988 and 1989.
[2] Mean skin-to-skin time, teaching cases, system of nine hospitals, 1987.
[3] Mean skin-to-skin time, non-teaching cases, system of nine hospitals, 1987.
[4] Median skin-to-skin time, sixteen hospitals of varying characteristics, 1986.
[5] Mean intra-service time from the RBRVS study.

Table 4.11 (continued)
A comparison of intra-service time from different data sources

CPT code	Description	Intra-service time (mins) Hosp A[1]	Hosp B[1]	Hosps C[2]	Hosps D[3]	Battelle study[4]	RBRVS[5]
50590	Fragmenting of kidney stone	55 (911)	.	.	.	.	66
52601	Prostatectomy (TURP)	55 (620)	63 (198)	56 (4)	54 (425)	50 (487)	62
54161	Circumcision	35 (141)	39 (57)	45 (4)	27 (404)	.	45
58120	Dilation & curettage (D&C)	10 (150)	8 (2010)	10 (354)	8 (1714)	.	13
58150	Total hysterectomy	117 (487)	111 (615)	94 (78)	83 (139)	115 (90)	89
61700	Inner skull vessel surgery	265 (125)	.	275 (2)	233 (9)	.	280
64721	Carpal tunnel surgery	25 (230)	24 (277)	29 (18)	24 (347)	.	35
66984	Remove cataract insert lens	60 (891)	52 (50)	.	.	.	54

Note: The number of cases is shown in parentheses below the intra-service times.

[1] Median skin-to-skin time, teaching hospital, two years of data: 1988 and 1989.
[2] Mean skin-to-skin time, teaching cases, system of nine hospitals, 1987.
[3] Mean skin-to-skin time, non-teaching cases, system of nine hospitals, 1987.
[4] Median skin-to-skin time, sixteen hospitals of varying characteristics, 1986.
[5] Mean intra-service time from the RBRVS study.

Table 4.12

Comparison of time data for surgical reference CPT codes
national survey versus phase 3 estimates

		Phase 3 small group panel				National survey				
		Time (mins)				Time (mins)				Ratio nat'l
CPT	Description	Sp*	Mean	S.E**	N	Sp*	Mean	S.E**	N	vs. Ph3
11200	Removal of skin tags	dm	11	2.4%	14	dm	11	6.7%	74	1.00
11441	Removal of skin lesion	dm	25	8.0	15	dm	22	4.8	146	0.88
11640	Removal of skin lesion	dm	20	10.1	15	dm	15	7.4	78	0.75
11642	Removal of skin lesion	dm/ps	39	13.1	31	dm/ps	38	6.4	352	0.97
12011	Repair superficial wound(s)	gs	19	12.7	30	gs/dm	22	4.3	101	1.16
13132	Repair of wound or lesion	ps	42	8.5	16	ps	50	4.2	102	1.19
13300	Repair of wound or lesion	ps	58	6.7	16	ps	61	4.6	102	1.05
14040	Skin tissue rearrangement	ps	96	11.2	16	ps/dm	92	4.5	102	0.96
15100	Skin split graft procedure	gs/ps	63	10.1	43	gs/ps	73	4.5	193	1.16
15260	Skin full graft procedure	ps	80	8.4	16	ps	92	4.2	102	1.15
15946	Removal of pressure sore	ps	160	7.5	16	ps	184	3.3	100	1.15
17000	Destruction of facial lesion	dm	6	9.7	15	dm	6	7.0	150	1.00
17100	Destruction of skin lesion	dm	6	10.3	15	dm	6	7.0	150	1.00
17304	Chemosurgery of skin lesion	dm	50	7.1	7	dm	50	10.7	30	1.00
19240	Removal of breast	gs	114	7.0	53	gs	104	3.1	199	0.91
20610	Drain/inject joint/bursa	or	15	9.3	14	or	15	5.4	107	1.00
21320	Treatment of nose fracture	ot	29	5.0	17	ot	25	5.4	103	0.86
23472	Reconstruct shoulder joint	or	144	7.1	11	or	142	4.1	52	0.99
24515	Repair humerus fracture	or	119	1.2	13	or	106	4.0	76	0.89
25111	Remove wrist tendon lesion	or	41	9.6	15	or	41	4.7	78	1.00
25605	Treat fracture radius/ulna	or	48	11.9	27	or	35	3.6	153	0.73
26055	Incise finger tendon sheath	or	26	8.9	13	or	25	4.9	78	0.96
27091	Removal of hip prosthesis	or	202	6.7	12	or	178	6.8	69	0.88
27125	Partial hip replacement	or	89	6.9	27	or	84	3.2	155	0.94
27130	Total hip replacement	or	132	5.1	27	or	128	3.0	104	0.97

*Specialty(ies) surveyed to obtain time estimate.
**Standard error is reported as a percent of the mean.

Table 4.12 (continued)

Comparison of time data for surgical reference CPT codes
national survey versus phase 3 estimates

		Phase 3 small group panel				National survey				
			Time (mins)				Time (mins)			Ratio
CPT	Description	Sp*	Mean	S.E**	N	Sp*	Mean	S.E**	N	nat'l vs. Ph3
27132	Total hip replacement	or	178	7.1	27	or	194	2.2	147	1.09
27236	Repair of thigh fracture	or	93	9.0	26	or	89	3.1	151	0.96
27244	Repair of thigh fracture	or	88	5.5	14	or	79	3.5	259	0.90
27447	Total knee replacement	or	129	5.8	28	or	139	2.2	149	1.08
27590	Amputate leg at thigh	gs	61	8.7	53	gs	69	3.3	87	1.13
28292	Correction of bunion	or	55	6.6	13	or	56	3.0	102	1.02
28470	Treat metatarsal fracture	or	20	8.8	14	or	23	4.7	77	1.15
29881	Knee arthroscopy/surgery	or	61	8.1	24	or	66	3.3	247	1.08
31535	Operative laryngoscopy	ot	26	9.1	17	ot	24	4.4	102	0.92
31603	Incision of windpipe	ot	12	10.1	25	ot/gs/ts	23	6.9	105	1.92
32000	Drainage of chest	ts	31	10.1	21	ts	28	4.5	96	0.90
32020	Insertion of chest tube	ts	20	8.3	23	ts/gs	24	5.9	96	1.20
32480	Partial removal of lung	ts	152	5.3	20	ts	131	3.4	91	0.86
33010	Drainage of heart sac	ts	29	11.3	23	ts	24	6.3	94	0.83
33207	Insertion of heart pacemaker	ca/ts	68	7.2	24	ca/ts	62	4.6	155	0.91
33405	Replacement of aortic valve	ts	199	4.1	22	ts	186	3.0	81	0.93
33512	Coronary arteries bypass	ts	226	4.6	22	ts	200	2.7	80	0.88
35081	Repair defect of artery	gs/ts	194	7.1	27	ts	167	3.3	81	0.86
35301	Rechanneling of artery	gs/ts/ns	118	8.8	41	ns/ts	120	5.0	155	1.02
36800	Insertion of cannula	gs	29	1.7	10	np	35	5.0	95	1.21
36830	Artery-vein graft	gs	102	10.3	37	gs	92	5.7	52	0.90
38100	Removal of spleen, total	gs	80	8.3	29	gs	91	3.4	98	1.14
39400	Visualization of chest	ts	53	10.5	19	ts	46	4.2	92	0.87
43235	Upper GI endoscopy,diagnosis	ga	24	7.4	38	ga/im	29	4.5	106	1.21
43239	Upper GI endoscopy, biopsy	ga	24	6.2	21	ga	25	4.0	104	1.04

*Specialty(ies) surveyed to obtain time estimate.
**Standard error is reported as a percent of the mean.

Table 4.12 (continued)

Comparison of time data for surgical reference CPT codes
national survey versus phase 3 estimates

		Phase 3 small group panel				National survey				
		Time (mins)				Time (mins)				Ratio nat'l
CPT	Description	Sp*	Mean	S.E**	N	Sp*	Mean	S.E**	N	vs. Ph3
43255	Operative upper GI endoscopy	ga	43	5.6	21	ga	42	4.0	105	0.98
43260	Endoscopy,bile duct/pancreas	ga	41	9.5	17	ga	48	5.0	90	1.17
43262	Endoscopy,bile duct/pancreas	ga	63	9.3	17	ga	75	5.1	76	1.19
43450	Dilate esophagus	ga	16	4.8	21	ga	19	6.0	103	1.19
44120	Removal of small intestine	gs	97	5.8	55	gs	95	3.0	98	0.98
44140	Partial removal of colon	gs	106	7.4	55	gs	104	3.3	99	0.98
45110	Removal of rectum	gs	202	6.2	53	gs	194	3.0	97	0.96
45330	Sigmoidoscopy, diagnostic	ga	11	6.7	21	ga/im	17	4.0	107	1.55
45378	Diagnostic colonoscopy	ga	37	6.6	21	ga/gs	39	3.2	107	1.05
45380	Colonoscopy and biopsy	ga	44	3.6	21	ga	42	3.5	107	0.95
45385	Colonoscopy, lesion removal	ga	54	4.7	21	ga	53	2.9	106	0.98
46260	Hemorrhoidectomy	gs	45	8.6	26	gs	53	3.4	98	1.18
47600	Removal of gallbladder	gs	59	7.6	29	gs	64	3.3	197	1.08
49505	Repair inguinal hernia	gs	53	6.6	55	gs/ur	48	3.2	204	0.91
50590	Fragmenting of kidney stone	ur	69	9.2	26	ur	66	4.4	65	0.96
51595	Remove bladder; revise tract	ur	367	6.1	27	ur	328	2.3	112	0.89
52000	Cystoscopy	ur	16	9.4	28	ur	14	6.0	221	0.88
52332	Cystoscopy and treatment	ur	32	8.6	28	ur	32	4.1	110	1.00
52336	Cystoscopy, stone removal	ur	72	11.9	27	ur	75	4.1	112	1.04
52601	Prostatectomy (turp)	ur	69	6.7	28	ur	62	2.7	114	0.90
54400	Insert semi-rigid prosthesis	ur	67	7.7	27	ur	66	3.5	100	0.99
57454	Vagina examination & biopsy	ob	25	8.1	18	ob	28	3.5	82	1.12
58120	Dilation and curettage (d&c)	ob	16	8.4	19	ob	13	5.0	89	0.81
58150	Total hysterectomy	ob	76	6.3	19	ob/gs	89	3.5	87	1.17
59410	Obstetrical care	ob	35	7.5	18	ob	35	6.2	89	1.00

*Specialty(ies) surveyed to obtain time estimate.
**Standard error is reported as a percent of the mean.

Table 4.12 (continued)

Comparison of time data for surgical reference CPT codes
national survey versus phase 3 estimates

		Phase 3 small group panel				National survey				
		Time (mins)				Time (mins)				Ratio nat'l
CPT	Description	Sp*	Mean	S.E**	N	Sp*	Mean	S.E**	N	vs. Ph3
60500	Explore parathyroid glands	gs	134	8.0	52	gs	138	3.6	90	1.03
61154	Pierce skull, remove clot	ns	60	8.4	18	ns	69	5.0	110	1.15
61312	Open skull for drainage	ns	140	6.4	18	ns	150	4.1	111	1.07
61510	Removal of brain lesion	ns	203	5.5	18	ns	219	3.1	108	1.08
61512	Remove brain lining lesion	ns	209	4.7	18	ns	241	3.2	112	1.15
61518	Removal of brain lesion	ns	254	5.9	18	ns	299	3.7	108	1.18
61700	Inner skull vessel surgery	ns	263	4.3	18	ns	280	3.2	108	1.06
62284	Injection for myelogram	ns	29	8.3	15	ns	25	5.0	89	0.86
63017	Removal of spinal lamina	ns/or	160	4.5	39	ns/or	168	3.0	278	1.05
63030	Low back disk surgery	ns	87	6.9	18	ns/or	91	3.8	112	1.05
63042	Low back disk surgery	ns	133	6.6	18	ns/or	159	3.4	111	1.20
64721	Carpal tunnel surgery	or	34	7.4	29	or/gs/ns	35	3.5	263	1.03
65285	Repair of eye wound	op	78	11.8	28	op	79	4.1	82	1.01
65855	Laser surgery of eye	op	24	10.2	23	op	23	4.1	153	0.96
66761	Revision of iris	op	19	11.9	24	op	21	4.9	158	1.11
66821	Lasering, secondary cataract	op	11	11.7	27	op	15	4.9	161	1.36
66983	Remove cataract, insert lens	op	53	5.7	27	op	52	2.7	146	0.98
66984	Remove cataract, insert lens	op	53	7.1	27	op	54	3.1	257	1.02
66985	Insert lens prosthesis	op	37	6.7	24	op	40	3.7	255	1.08
67010	Partial removal of eye fluid	op	46	4.1	9	op	45	4.4	76	0.98
67036	Removal of inner eye fluid	op	82	13.2	21	op	76	5.9	84	0.93
67107	Repair detached retina	op	102	11.7	8	op	107	4.1	152	1.05
67228	Treatment of retinal lesion	op	58	14.7	21	op	69	6.2	187	1.19
67840	Remove eyelid lesion	op	24	20.8	13	op/gs	36	5.6	90	1.50
69641	Revise middle ear & mastoid	ot	163	8.7	10	ot	175	3.0	99	1.07

*Specialty(ies) surveyed to obtain time estimate.
**Standard error is reported as a percent of the mean.

Table 4.13

Comparison of intra-service time for surgical reference services with estimates from other studies (time in minutes)

CPT	Description	Intra-service time: Abt	Intra-service time: Harvard	Ratio*
Comparison with the Study by Abt Associates				
31625	Bronchoscopy with biopsy	25	30	1.20
32020	Insertion of chest tube	16	16	1.00
32480	Partial removal of lung	132	131	0.99
33207	Insertion of heart pacemaker	53	47	0.89
33405	Replacement of aortic valve	164	186	1.13
33425	Repair of mitral valve	182	217	1.19
33512	Coronary arteries bypass	199	200	1.01
35081	Repair defect of artery	184	167	0.91
35301	Rechanneling of artery	94	98	1.04
39400	Visualization of chest	49	46	0.94
Comparison with the study by Battelle				
43235	Complex diagnostic ugi	27	29	1.07
43262	ERCP w sphincterotomy	88	75	0.85
45330	Sigmoidoscopy	16	17	1.06
45385	Fiberoptic colonoscopy	58	53	0.91

* Ratio of Harvard reference set estimate to estimate from other study.

Table 4.14

Comparison of post-operative office visit time per visit: Harvard Reference Set versus national ambulatory medical survey (NAMCS)

Specialty	NAMCS median visit time	Harvard Ref mean* visit time
Dermatology	8	10
General Surgery	10	11
Neurosurgery	15	15
Obstetrics/Gynecology	15	14
Ophthalmology	15	13
Orthopedic Surgery	10	11
Otolaryngology	10	11
Plastic Surgery	7	14
Thoracic Surgery	14	20
Urology	10	13

*Mean time per post-operative office visit across all procedures for each specialty.

Source for NAMCS Data: PPRC, "Pre- and Post-Operative Visits Associated with Surgical Global Services, 1991."

Table 4.15

Comparison of the number of post-operative hospital and office visits for selected procedures: PPRC surgical global visit study and Harvard Reference Set*

			Hospital visits			Office visits		
CPT	Sp	Description	PPRC	Harv	Ratio Harv to PPRC	PPRC	Harv	Ratio Harv to PPRC
14040	ps	Skin tissue rearrangement	0	1.5	--	4	4.0	1.00
14060	ps	Skin tissue rearrangement	0	0.0	1.00	4	5.0	1.25
15100	ps	Skin split graft procedure	5	3.5	0.70	4	4.5	1.12
15822	ps	Revision of upper eyelid	0	0.0	1.00	4	3.5	0.88
19240	gs	Removal of breast	4	5.0	1.25	4	5.5	1.37
21200	mx	Osteotomy mandible total	3	3.5	1.17	7	7.0	1.00
21215	mx	Lower jaw bone graft	3	3.0	1.00	4	6.5	1.62
21240	mx	Reconstruction of jaw joint	3	2.0	0.67	6	7.5	1.25
21365	mx	Repair cheek bone fracture	3	3.5	1.17	3	6.0	2.00
21470	mx	Repair lower jaw fracture	3	4.0	1.33	5	7.5	1.50
25605	or	Treat fracture radius/ulna	0	0.0	1.00	5	5.0	1.00
25611	or	Repair fracture radius/ulna	1	0.5	0.50	5	6.0	1.20
26055	or	Incise finger tendon sheath	0	0.0	1.00	2	2.5	1.25
27130	or	Total hip replacement	10	9.0	0.90	3	3.5	1.17
27244	or	Repair of thigh fracture	10	10.0	1.00	3	4.0	1.33
27786	or	Treatment of ankle fracture	0	0.0	1.00	5	4.0	0.80
28080	or	Removal of foot lesion	0	0.0	1.00	4	3.5	0.88
28292	or	Correction of bunion	0	1.0	--	5	5.0	1.00
29881	or	Knee arthroscopy/surgery	0	0.0	1.00	4	3.0	0.75
30520	ot	Repair of nasal septum	0	0.0	1.00	3	3.0	1.00
31365	ot	Removal of larynx	13	14.0	1.08	5	5.0	1.00
32480	ts	Partial removal of lung	9	9.5	1.06	4	1.5	0.38
33207	ts	Insertion of heart pacemaker	4	3.0	0.75	1	1.5	1.50
33405	ts	Replacement of aortic valve	12	10.0	0.83	1	1.5	1.50
33512	ts	Coronary arteries bypass	9	9.0	1.00	1	1.5	1.50
34201	ts	Removal of artery clot	8	6.5	0.81	3	3.0	1.00
35081	ts	Repair defect of artery	10	10.0	1.00	5	2.0	0.40

* Includes major surgical procedures surveyed in the Harvard RRVS study and included in the PPRC study.

Table 4.15 (continued)

Comparison of the number of post-operative hospital and office visits for selected procedures: PPRC surgical global visit study and Harvard Reference Set*

CPT	Sp	Description	Hospital visits			Office visits		
			PPRC	Harv	Ratio Harv to PPRC	PPRC	Harv	Ratio Harv to PPRC
35301	ts	Rechanneling of artery	8	5.0	0.63	3	2.0	0.67
35556	gs	Artery bypass graft	8	9.0	1.12	3	3.5	1.17
35566	gs	Artery bypass graft	9	8.5	0.94	4	3.5	0.88
35646	gs	Artery bypass graft	9	10.5	1.17	3	3.5	1.17
38720	gs	Removal of lymph nodes, neck	6	5.0	0.83	4	4.0	1.00
42415	ot	Excise parotid gland/lesion	2	2.5	1.25	3	3.5	1.17
42820	ot	Remove tonsils and adenoids	1	0.5	0.50	1	1.5	1.50
43630	gs	Partial removal of stomach	8	10.0	1.25	3	4.0	1.33
43830	gs	Place gastrostomy tube	4	5.0	1.25	4	2.5	0.63
44005	gs	Freeing of bowel adhesion	8	8.5	1.06	2	2.5	1.25
44120	gs	Removal of small intestine	10	8.5	0.85	2	3.0	1.50
44950	gs	Appendectomy	3	2.5	0.83	2	2.0	1.00
45110	gs	Removal of rectum	11	13.0	1.18	3	5.5	1.83
49505	gs	Repair inguinal hernia	2	1.0	0.50	2	2.0	1.00
49560	gs	Repair abdominal hernia	2	3.0	1.50	2	2.5	1.25
50080	ur	Removal of kidney stone	7	3.5	0.50	3	2.5	0.83
50230	ur	Removal of kidney	8	9.0	1.12	3	2.5	0.83
50590	ur	Fragmenting of kidney stone	0	0.5	--	3	2.5	0.83
51840	ur	Attach bladder/urethra	6	5.5	0.92	3	2.5	0.83
52601	ur	Prostatectomy (TURP)	4	4.0	1.00	3	2.5	0.83
55845	ur	Extensive prostate surgery	9	11.0	1.22	4	3.0	0.75
57260	ob	Repair of vagina	5	4.0	0.80	2	2.5	1.25
58150	ob	Total hysterectomy	5	5.0	1.00	2	2.5	1.25
58210	ob	Extensive hysterectomy	9	9.0	1.00	3	3.5	1.17
58720	ob	Removal of overy/tube(s)	5	3.0	0.60	3	2.0	0.67
58740	ob	Revise fallopian tube(s)	3	2.0	0.67	2	2.0	1.00
59400	ob	Obstetrical care	1	2.0	2.00	1	1.5	1.50
59510	ob	Cesarean delivery	5	4.0	0.80	2	2.0	1.00

* Includes major surgical procedures surveyed in the Harvard RRVS study and included in the PPRC study.

Table 4.15 (continued)

Comparison of the number of post-operative hospital and office visits for selected procedures: PPRC surgical global visit study and Harvard Reference Set*

CPT	Sp	Description	Hospital visits			Office visits		
			PPRC	Harv	Ratio Harv to PPRC	PPRC	Harv	Ratio Harv to PPRC
59841	ob	Abortion	0	0.0	1.00	1	1.0	1.00
60220	gs	Partial removal of thyroid	3	3.5	1.17	2	2.5	1.25
61312	ns	Open skull for drainage	9	10.5	1.17	3	2.5	0.83
61510	ns	Removal of brain lesion	10	8.5	0.85	3	2.5	0.83
62223	ns	Establish brain cavity shunt	7	6.0	0.86	2	2.5	1.25
63017	ns	Removal of spinal lamina	6	7.0	1.17	3	3.0	1.00
63030	ns	Low back disk surgery	5	5.5	1.10	3	2.5	0.83
63042	ns	Low back disk surgery	5	6.5	1.30	4	2.5	0.63
64721	or	Carpal tunnel surgery	0	0.0	1.00	2	3.5	1.75
65750	op	Corneal transplant	1	0.5	0.50	6	6.5	1.08
65855	op	Laser surgery of eye	0	0.0	1.00	3	3.0	1.00
66170	op	Incision of eye	0	0.0	1.00	7	6.0	0.86
66984	op	Remove cataract, insert lens	0	0.0	1.00	5	5.5	1.10
66985	op	Insert lens prosthesis	0	0.0	1.00	5	5.0	1.00
67036	op	Removal of inner eye fluid	1	0.5	0.50	5	4.5	0.90
67107	op	Repair detached retina	1	1.0	1.00	4	4.5	1.12
67917	op	Repair eyelid defect	0	0.0	1.00	3	3.5	1.17
69631	ot	Repair eardrum structures	0	0.5	--	4	4.0	1.00

Specialty abbreviations used are:

gs = general surgery
mx = oral and maxillofacial surgery
ns = neurosurgery
ob = obstetrics and gynecology
op = ophthalmology
or = orthopedics
ot = otolaryngology
ps = plastic surgery
ts = cardiothoracic surgery
ur = urology

* Includes major surgical procedures surveyed in the Harvard RRVS study and included in the PPRC study.

Table 4.16

Comparison of the number of post-operative hospital and office visits for selected procedures: PPRC global visit study and Harvard reference data set

Summary of ratio of PPRC to Harvard reference data set estimate

Specialty	Number of services	Hospital visits Median ratio	Office visits Median ratio
Cardiothoracic surgery	7	0.83	1.00
General surgery	14	1.15	1.21
Neurosurgery	6	1.13	0.83
Obstetrics & gynecology	8	0.90	1.08
Ophthalmology	8	1.00	1.04
Oral/maxillofacial surgery	5	1.17	1.50
Orthopedic surgery	10	1.00	1.08
Otolaryngology	5	1.04	1.00
Plastic surgery	4	1.00	1.06
Urology	7	1.00	0.83
All Specialties	74	1.00	1.00

Table 4.17

Review of time data for surgical reference CPT-4 codes -- summary of frequency of judgments: pre-, intra-, immediate pre- and post-op, and later same day post-op time

		Frequency of judgments											
		Pre-service time before O.R. entry			Intra-time			Immediate pre- and post-op time			Later Same Day Post Visits		
CPT-4	Description	DN	OK	UP	DN	OK	UP	DN	OK	UP	DN	OK	UP
General surgery													
12011	Repair superficial wound(s)	0	18	7	1	22	2	0	21	4	0	25	0
15100	Skin split graft procedure	0	25	0	0	25	0	0	24	1	0	25	0
19140	Removal of breast tissue	2	23	0	1	23	1	2	21	2	1	22	2
19240	Removal of breast	0	23	2	0	20	5	1	23	1	0	24	1
20220	Bone biopsy, trocar/needle	0	24	1	0	25	0	0	25	0	0	25	0
27590	Amputate leg at thigh	0	24	1	0	24	1	0	24	1	0	25	0
31625	Bronchoscopy with biopsy	0	21	4	1	24	0	0	23	2	0	23	2
34101	Removal of artery clot	0	20	5	0	23	2	1	23	1	0	23	2
35081	Repair defect of artery	0	19	6	0	21	4	2	23	0	0	21	4
35301	Rechanneling of artery	0	24	1	2	22	1	2	22	1	0	22	3
35641	Artery bypass graft	0	21	4	2	23	0	2	21	2	0	22	3
36800	Insertion of cannula	0	22	3	0	24	1	0	25	0	0	24	1
36830	Artery-vein graft	0	23	2	0	24	1	1	24	0	0	25	0
38100	Removal of spleen, total	0	22	3	2	21	2	2	21	2	0	24	1
43832	Place gastrostomy tube	1	22	2	2	21	2	2	22	1	0	18	7
44120	Removal of small intestine	0	23	2	1	22	2	2	23	0	0	24	1
44140	Partial removal of colon	0	23	2	0	19	6	2	22	1	0	24	1
44150	Removal of colon	0	22	3	0	20	5	2	22	1	1	22	2
44950	Appendectomy	2	22	1	1	22	2	2	23	0	1	24	0
45110	Removal of rectum	0	21	4	1	22	2	2	23	0	0	22	3
46260	Hemorrhoidectomy	2	22	1	1	21	3	2	21	2	0	20	5
47600	Removal of gallbladder	0	22	3	0	21	4	2	22	1	1	23	1
47610	Removal of gallbladder	2	21	2	0	21	4	2	21	2	0	24	1
48150	Partial removal of pancreas	0	20	5	1	21	3	2	22	1	0	23	2
49505	Repair inguinal hernia	0	23	2	1	22	2	2	23	0	1	21	3
58150	Total hysterectomy	0	23	2	1	22	2	1	24	0	0	25	0
60220	Partial removal of thyroid	0	22	3	1	21	3	2	23	0	1	23	1
60500	Explore parathyroid glands	0	23	2	2	21	2	2	21	2	1	22	2

Table 4.17 (continued)

Review of time data for surgical reference CPT-4 codes -- summary of frequency of judgments: pre-, intra-, immediate pre- and post-op, and later same day post-op time

		Frequency of judgments											
		Pre-service time before O.R. entry			Intra-time			Immediate pre- and post-op time			Later Same Day Post Visits		
CPT-4	Description	DN	OK	UP	DN	OK	UP	DN	OK	UP	DN	OK	UP
Oral and maxillofacial surgery													
21030	Removal of face bone lesion	0	20	1	0	19	2	0	20	1	0	21	0
21040	Removal of jaw bone lesion	0	20	1	0	21	0	0	20	1	0	21	0
21041	Removal of jaw bone lesion	0	19	2	0	18	3	0	21	0	0	21	0
21110	Interdental fixation	0	21	0	0	17	4	0	21	0	0	21	0
21145	Reconstruct midface, lefort1	0	18	3	0	21	0	0	21	0	0	21	0
21147	Reconstruct midface, lefort1	0	18	3	0	18	3	0	21	0	0	20	1
21155	Reconstruct midface, lefort3	1	17	3	0	20	1	1	19	1	0	20	1
21210	Face bone graft	0	20	1	0	21	0	0	21	0	0	21	0
21215	Lower jaw bone graft	0	19	2	0	20	1	0	21	0	0	21	0
21240	Reconstruction of jaw joint	0	21	0	0	20	1	0	21	0	0	21	0
21248	Reconstruction of jaw	0	18	3	0	19	2	0	19	2	0	21	0
21249	Reconstruction of jaw	0	18	3	0	19	2	0	19	2	0	21	0
21310	Treatment of nose fracture	0	21	0	1	20	0	0	21	0	0	21	0
21315	Treatment of nose fracture	0	21	0	1	20	0	0	21	0	0	21	0
21365	Repair cheek bone fracture	0	21	0	0	18	3	0	21	0	0	21	0
21462	Repair lower jaw fracture	0	21	0	0	19	2	0	21	0	0	21	0
21470	Repair lower jaw fracture	0	18	3	0	19	2	0	20	1	0	21	0
21480	Reset dislocated jaw	0	21	0	0	21	0	0	21	0	0	21	0
21485	Reset dislocated jaw	0	21	0	0	21	0	0	21	0	0	21	0
Neurosurgery													
22554	Neck spine fusion	0	15	0	0	15	0	0	14	1	0	15	0
22558	Lumbar spine fusion	0	15	0	0	14	1	0	14	1	0	15	0
35301	Rechanneling of artery	0	15	0	0	12	3	0	15	0	3	10	2
61154	Pierce skull, remove clot	0	15	0	0	13	2	0	14	1	0	15	0
61312	Open skull for drainage	0	15	0	0	14	1	0	14	1	0	15	0
61510	Removal of brain lesion	0	15	0	0	13	2	0	13	2	0	15	0
61512	Remove brain lining lesion	0	12	3	0	12	3	0	14	1	0	15	0
61518	Removal of brain lesion	0	13	2	0	15	0	0	14	1	1	12	2
61520	Removal of brain lesion	0	13	2	0	13	2	0	14	1	1	12	2

Table 4.17 (continued)

Review of time data for surgical reference CPT-4 codes -- summary of frequency of judgments: pre-, intra-, immediate pre- and post-op, and later same day post-op time

		Frequency of judgments											
		Pre-service time before O.R. entry			Intra-time			Immediate pre- and post-op time			Later Same Day Post Visits		
CPT-4	Description	DN	OK	UP	DN	OK	UP	DN	OK	UP	DN	OK	UP
Neurosurgery (continued)													
61700	Inner skull vessel surgery	1	14	0	0	14	1	1	13	1	2	11	2
63017	Removal of spinal lamina	0	15	0	0	14	1	0	15	0	0	15	0
63030	Low back disk surgery	0	14	1	0	14	1	0	13	2	0	15	0
63042	Low back disk surgery	0	14	1	0	14	1	0	13	2	0	15	0
63047	Removal of spinal lamina	0	15	0	0	14	1	0	13	2	0	15	0
63780	Insert spinal canal catheter	0	15	0	1	13	1	0	15	0	0	15	0
64721	Carpal tunnel surgery	0	15	0	0	12	3	0	14	1	0	15	0
Obstetrics and gynecology													
57240	Repair bladder & vagina	0	14	1	0	14	1	0	14	1	0	15	0
57260	Repair of vagina	0	15	0	0	14	1	0	14	1	0	15	0
57280	Suspension of vagina	0	15	0	0	15	0	0	14	1	0	15	0
57520	Conization cervix	0	14	1	0	14	1	0	14	1	0	10	5
58120	Dilation and curettage (d&c)	0	15	0	0	14	1	0	14	1	0	10	5
58150	Total hysterectomy	0	14	1	1	13	1	0	14	1	0	15	0
58152	Total hysterectomy	0	14	1	1	13	1	0	14	1	0	15	0
58260	Vaginal hysterectomy	0	15	0	1	13	1	0	14	1	0	15	0
58720	Removal of ovary/tube(s)	0	14	1	1	13	1	0	14	1	0	15	0
58940	Removal of ovary(s)	0	14	1	1	13	1	0	14	1	0	15	0
58950	Resect ovarian malignancy	0	14	1	0	14	1	0	14	1	0	15	0
59410	Obstetrical care	0	12	3	0	12	3	0	14	1	1	14	0
Ophthalmology													
65285	Repair of eye wound	1	17	1	0	18	1	0	19	0	0	19	0
65750	Corneal transplant	0	17	2	0	19	0	0	19	0	0	19	0
65855	Laser surgery of eye	0	17	2	0	19	0	0	19	0	0	19	0
66761	Revision of iris	0	19	0	0	19	0	0	19	0	0	17	2
66821	Lasering, secondary cataract	0	18	1	0	19	0	0	19	0	0	17	2
66983	Remove cataract, insert lens	0	19	0	0	19	0	0	19	0	0	19	0
66984	Remove cataract, insert lens	0	19	0	0	19	0	0	19	0	0	19	0
66985	Insert lens prosthesis	0	19	0	0	18	1	0	19	0	0	19	0

Table 4.17 (continued)

Review of time data for surgical reference CPT-4 codes -- summary of frequency of judgments: pre-, intra-, immediate pre- and post-op, and later same day post-op time

		Frequency of judgments											
		Pre-service time before O.R. entry			Intra-time			Immediate pre- and post-op time			Later Same Day Post Visits		
CPT-4	Description	DN	OK	UP	DN	OK	UP	DN	OK	UP	DN	OK	UP
Ophthalmology (continued)													
67010	Partial removal of eye fluid	0	18	1	0	19	0	0	19	0	0	19	0
67036	Removal of inner eye fluid	0	18	1	0	17	2	0	19	0	0	19	0
67107	Repair detached retina	0	18	1	0	19	0	0	19	0	0	19	0
67108	Repair detached retina	0	19	0	0	19	0	0	19	0	0	19	0
67227	Treatment of retinal lesion	0	19	0	0	19	0	0	19	0	0	19	0
67228	Treatment of retinal lesion	0	18	1	0	19	0	0	19	0	0	19	0
Orthopedic surgery													
23472	Reconstruct shoulder joint	0	14	0	0	12	2	1	13	0	0	14	0
24515	Repair humerus fracture	0	13	1	0	12	2	0	14	0	0	14	0
25111	Remove wrist tendon lesion	1	13	0	0	14	0	0	13	1	1	13	0
25605	Treat fracture radius/ulna	0	14	0	0	12	2	0	13	1	0	13	1
25611	Repair fracture radius/ulna	0	14	0	0	13	1	0	14	0	0	13	1
26055	Incise finger tendon sheath	0	14	0	1	13	0	0	14	0	1	13	0
26115	Removal of hand lesion	0	14	0	0	13	1	0	14	0	0	13	1
27091	Removal of hip prosthesis	0	13	1	0	13	1	1	13	0	0	14	0
27125	Partial hip replacement	0	13	1	0	13	1	0	14	0	0	14	0
27130	Total hip replacement	0	12	2	0	14	0	0	14	0	0	14	0
27132	Total hip replacement	0	12	2	0	14	0	0	14	0	0	14	0
27230	Treat fracture of thigh	0	13	1	1	12	1	0	13	1	0	14	0
27236	Repair of thigh fracture	0	13	1	0	14	0	0	14	0	0	14	0
27244	Repair of thigh fracture	0	13	1	0	10	4	0	13	1	0	14	0
27310	Exploration of knee joint	0	12	2	0	14	0	0	14	0	0	14	0
27332	Removal of knee cartilage	0	14	0	0	14	0	0	14	0	0	13	1
27425	Lateral retinacular release	0	13	1	0	13	1	0	14	0	0	14	0
27447	Total knee replacement	0	12	2	0	14	0	0	14	0	0	14	0
27514	Repair of thigh fracture	0	10	4	0	14	0	0	14	0	0	14	0
27524	Repair of kneecap fracture	0	11	3	0	14	0	0	14	0	0	14	0
27814	Repair of ankle fracture	0	12	2	0	13	1	1	13	0	0	12	2
28292	Correction of bunion	1	13	0	0	14	0	0	14	0	0	13	1
29881	Knee arthroscopy/surgery	1	13	0	0	14	0	0	14	0	1	13	0
63017	Removal of spinal lamina	1	13	0	0	14	0	0	14	0	0	14	0
64721	Carpal tunnel surgery	1	13	0	0	14	0	0	14	0	0	14	0

Table 4.17 (continued)

Review of time data for surgical reference CPT-4 codes -- summary of frequency of judgments: pre-, intra-, immediate pre- and post-op, and later same day post-op time

CPT-4	Description	Frequency of judgments: Pre-service time before O.R. entry			Intra-time			Immediate pre- and post-op time			Later Same Day Post Visits		
		DN	OK	UP	DN	OK	UP	DN	OK	UP	DN	OK	UP
Otolaryngology													
21320	Treatment of nose fracture	0	9	1	1	9	0	0	10	0	0	10	0
30520	Repair of nasal septum	0	9	1	0	10	0	0	10	0	0	10	0
31201	Removal of ethmoid sinus	0	8	2	0	10	0	0	10	0	0	10	0
31225	Removal of upper jaw	0	8	2	0	9	1	0	10	0	0	10	0
31255	Removal of ethmoid sinus	0	8	2	0	10	0	0	10	0	0	10	0
31360	Removal of larynx	0	9	1	0	8	2	0	10	0	0	10	0
31505	Diagnostic laryngoscopy	0	8	2	0	9	1	0	9	1	0	9	1
31535	Operative laryngoscopy	0	9	1	0	10	0	0	10	0	0	10	0
31541	Operative laryngoscopy	0	9	1	0	10	0	0	10	0	0	10	0
31575	Diagnostic laryngoscopy	0	8	2	1	9	0	0	10	0	0	10	0
31603	Incision of windpipe	0	9	1	0	10	0	0	10	0	0	10	0
41120	Partial removal of tongue	0	10	0	0	10	0	0	10	0	0	10	0
41155	Tongue, jaw, & neck surgery	0	10	0	0	10	0	0	10	0	0	10	0
42420	Excise parotid gland/lesion	0	10	0	0	10	0	0	9	1	0	10	0
42440	Excision submaxillary gland	0	10	0	0	10	0	0	10	0	0	10	0
42820	Remove tonsils and adenoids	1	8	1	0	9	1	1	9	0	0	9	1
69433	Create eardrum opening	0	8	2	0	9	1	0	8	2	0	10	0
69631	Repair eardrum structures	0	9	1	0	10	0	0	10	0	0	10	0
69633	Rebuild eardrum structures	0	9	1	0	10	0	0	9	1	0	10	0
69641	Revise middle ear & mastoid	0	8	2	1	9	0	1	9	0	0	10	0
69642	Revise middle ear & mastoid	0	8	2	1	9	0	0	10	0	0	10	0
Cardiothoracic surgery													
32000	Drainage of chest	0	16	1	0	16	1	0	17	0	0	17	0
32020	Insertion of chest tube	0	15	2	0	14	3	0	17	0	0	17	0
32100	Exploration/biopsy of chest	0	15	2	0	15	2	1	16	0	1	15	1
32480	Partial removal of lung	0	16	1	1	13	3	1	16	0	1	15	1
32500	Partial removal of lung	0	17	0	0	16	1	1	15	1	1	16	0
33010	Drainage of heart sac	0	14	3	0	15	2	0	17	0	0	16	1
33206	Insertion of heart pacemaker	0	15	2	0	15	2	1	15	1	0	16	1
33207	Insertion of heart pacemaker	1	15	1	1	16	0	1	15	1	0	16	1
33405	Replacement of aortic valve	0	17	0	0	13	4	0	16	1	0	16	1

Table 4.17 (continued)

Review of time data for surgical reference CPT-4 codes -- summary of frequency of judgments: pre-, intra-, immediate pre- and post-op, and later same day post-op time

		Frequency of judgments											
		Pre-service time before O.R. entry			Intra-time			Immediate pre- and post-op time			Later Same Day Post Visits		
CPT-4	Description	DN	OK	UP	DN	OK	UP	DN	OK	UP	DN	OK	UP
Cardiothoracic surgery (continued)													
33425	Repair of mitral valve	0	16	1	0	12	5	0	16	1	0	15	2
33430	Replacement of mitral valve	0	17	0	0	13	4	0	16	1	0	16	1
33500	Repair heart vessel fistula	0	17	0	0	13	4	0	16	1	0	17	0
33510	Coronary artery bypass	0	17	0	1	14	2	1	15	1	0	17	0
33512	Coronary arteries bypass	0	17	0	0	13	4	1	15	1	0	16	1
33514	Coronary arteries bypass	0	17	0	1	12	4	1	15	1	0	16	1
33870	Transverse aortic arch graft	0	17	0	0	14	3	0	16	1	0	15	2
35081	Repair defect of artery	0	17	0	1	13	3	1	15	1	0	17	0
35301	Rechanneling of artery	0	17	0	1	16	0	0	17	0	0	17	0
39010	Exploration of chest	0	17	0	1	15	1	0	17	0	0	17	0
39020	Exploration of chest	0	17	0	0	14	3	0	17	0	0	17	0
39400	Visualization of chest	0	17	0	1	15	1	1	16	0	0	17	0
Urology													
50220	Removal of kidney	0	18	3	0	18	3	0	21	0	0	19	2
50230	Removal of kidney	1	18	2	0	20	1	0	21	0	0	19	2
50236	Removal of kidney & ureter	0	18	3	0	21	0	0	21	0	0	19	2
50590	Fragmenting of kidney stone	0	20	1	0	21	0	0	21	0	0	17	4
50780	Reimplant ureter in bladder	0	18	3	0	19	2	0	21	0	0	20	1
51590	Remove bladder; revise tract	1	19	1	0	21	0	0	21	0	0	19	2
51595	Remove bladder; revise tract	1	18	2	0	21	0	0	21	0	0	19	2
52332	Cystoscopy and treatment	1	19	1	0	20	1	0	21	0	0	19	2
52336	Cystoscopy, stone removal	0	19	2	0	21	0	0	21	0	0	20	1
52601	Prostatectomy (turp)	0	18	3	0	21	0	0	21	0	0	20	1
54161	Circumcision	0	20	1	1	20	0	1	20	0	0	19	2
54400	Insert semi-rigid prosthesis	1	17	3	0	20	1	0	20	1	0	17	4
54520	Removal of testis	0	20	1	0	21	0	0	21	0	0	18	3
54640	Suspension of testis	1	19	1	0	21	0	0	21	0	0	18	3
55821	Removal of prostate	0	19	2	0	20	1	0	21	0	0	20	1
55831	Removal of prostate	0	19	2	0	20	1	0	21	0	0	20	1
55845	Extensive prostate surgery	0	19	2	1	20	0	1	20	0	0	20	1

Table 4.18

Review of time data for surgical reference CPT-4 codes -- summary of frequency of judgements: hospital, ICU, and office post-operative visits

		Frequency of judgments								
		Hospital visits			ICU visits			Office visits		
CPT-4	Description	DN	OK	UP	DN	OK	UP	DN	OK	UP
General surgery										
12011	Repair superficial wound(s)	.	.	.	.	.	.	0	19	6
15100	Skin split graft procedure	0	25	0	0	25	0	0	25	0
19140	Removal of breast tissue	1	23	1	0	25	0	4	21	0
19240	Removal of breast	1	22	2	0	25	0	2	22	1
20220	Bone biopsy, trocar/needle	.	.	.	.	.	.	.	.	.
27590	Amputate leg at thigh	0	25	0	0	23	2	0	23	2
31625	Bronchoscopy with biopsy	.	.	.	.	.	.	.	.	.
34101	Removal of artery clot	0	22	3	1	21	3	0	22	3
35081	Repair defect of artery	0	21	4	0	19	6	0	17	8
35301	Rechanneling of artery	1	21	3	0	21	4	0	18	7
35641	Artery bypass graft	1	22	2	0	15	10	2	22	1
36830	Artery-vein graft	2	23	0	0	25	0	0	25	0
38100	Removal of spleen, total	1	22	2	0	22	3	1	23	1
43832	Place gastrostomy tube	5	20	0	0	25	0	2	22	1
44120	Removal of small intestine	2	22	1	0	24	1	1	24	0
44140	Partial removal of colon	2	21	2	0	24	1	2	21	2
44150	Removal of colon	3	19	3	0	19	6	2	19	4
44950	Appendectomy	1	22	2	0	25	0	1	23	1
45110	Removal of rectum	2	21	2	0	21	4	3	18	4
46260	Hemorrhoidectomy	2	19	4	0	25	0	3	17	5
47600	Removal of gallbladder	2	21	2	0	25	0	1	22	2
47610	Removal of gallbladder	1	20	4	0	25	0	0	23	2
48150	Partial removal of pancreas	1	23	1	0	20	5	0	22	3
49505	Repair inguinal hernia	1	23	1	0	25	0	0	24	1
58150	Total hysterectomy	0	24	1	0	25	0	0	22	3
60220	Partial removal of thyroid	2	20	3	0	25	0	0	22	3
60500	Explore parathyroid glands	3	19	3	0	25	0	1	22	2

Table 4.18 (continued)

Review of time data for surgical reference CPT-4 codes -- summary of frequency of judgements: hospital, ICU, and office post-operative visits

		Frequency of judgments								
		Hospital visits			ICU visits			Office visits		
CPT-4	Description	DN	OK	UP	DN	OK	UP	DN	OK	UP
Oral and maxillofacial surgery										
21030	Removal of face bone lesion	0	21	0	0	21	0	0	19	2
21040	Removal of jaw bone lesion	0	21	0	0	21	0	0	21	0
21041	Removal of jaw bone lesion	0	21	0	0	21	0	0	19	2
21110	Interdental fixation	0	21	0	0	21	0	0	19	2
21145	Reconstruct midface, lefort1	0	20	1	0	18	3	0	18	3
21147	Reconstruct midface, lefort1	0	20	1	1	20	0	0	19	2
21155	Reconstruct midface, lefort3	0	20	1	0	20	1	0	20	1
21210	Face bone graft	0	20	1	0	21	0	0	20	1
21215	Lower jaw bone graft	0	20	1	0	21	0	0	21	0
21240	Reconstruction of jaw joint	0	21	0	0	20	1	0	19	2
21248	Reconstruction of jaw	0	21	0	0	21	0	0	21	0
21249	Reconstruction of jaw	0	21	0	0	21	0	0	20	1
21310	Treatment of nose fracture	.	.	.	.	.	.	.	.	.
21315	Treatment of nose fracture	0	21	0	0	21	0	0	21	0
21365	Repair cheek bone fracture	1	19	1	0	20	1	1	16	4
21462	Repair lower jaw fracture	0	20	1	0	21	0	0	19	2
21470	Repair lower jaw fracture	0	19	2	1	19	1	0	19	2
21480	Reset dislocated jaw	0	21	0	0	21	0	0	21	0
21485	Reset dislocated jaw	0	21	0	0	21	0	0	21	0
Neurosurgery										
22554	Neck spine fusion	0	14	1	5	10	0	0	13	2
22558	Lumbar spine fusion	0	15	0	6	9	0	1	11	3
35301	Rechanneling of artery	0	13	2	0	10	5	0	14	1
61154	Pierce skull, remove clot	0	14	1	0	7	8	0	14	1
61312	Open skull for drainage	0	14	1	0	5	10	0	13	2
61510	Removal of brain lesion	1	12	2	0	4	11	0	14	1
61512	Remove brain lining lesion	1	12	2	0	4	11	0	14	1
61518	Removal of brain lesion	1	13	1	0	3	12	1	14	0
61520	Removal of brain lesion	1	10	4	0	3	12	1	13	1
61700	Inner skull vessel surgery	0	14	1	0	3	12	1	14	0

Table 4.18 (continued)

Review of time data for surgical reference CPT-4 codes -- summary of frequency of judgements: hospital, ICU, and office post-operative visits

		Frequency of judgments								
		Hospital visits			ICU visits			Office visits		
CPT-4	Description	DN	OK	UP	DN	OK	UP	DN	OK	UP
Neurosurgery (continued)										
63017	Removal of spinal lamina	0	15	0	0	15	0	1	14	0
63030	Low back disk surgery	1	14	0	0	15	0	1	13	1
63042	Low back disk surgery	1	14	0	0	15	0	0	14	1
63047	Removal of spinal lamina	0	15	0	0	15	0	0	14	1
63780	Insert spinal canal catheter	1	14	0	0	15	0	0	13	2
64721	Carpal tunnel surgery	0	15	0	0	15	0	5	10	0
Obstetrics and gynecology										
57240	Repair bladder & vagina	0	14	1	0	15	0	1	14	0
57260	Repair of vagina	1	13	1	0	15	0	1	14	0
57280	Suspension of vagina	0	14	1	0	15	0	0	15	0
57520	Conization cervix	0	14	1	0	15	0	1	10	4
58120	Dilation and curettage (d&c)	0	14	1	0	15	0	0	14	1
58150	Total hysterectomy	3	11	1	0	15	0	3	11	1
58152	Total hysterectomy	3	11	1	0	15	0	2	11	2
58260	Vaginal hysterectomy	2	12	1	0	15	0	1	13	1
58720	Removal of ovary/tube(s)	1	13	1	0	15	0	2	13	0
58940	Removal of ovary(s)	2	12	1	0	15	0	2	13	0
58950	Resect ovarian malignancy	0	13	2	1	14	0	0	9	6
59410	Obstetrical care	0	15	0	0	15	0	3	11	1
Ophthalmology										
65285	Repair of eye wound	0	18	1	0	19	0	0	19	0
65750	Corneal transplant	0	19	0	0	19	0	0	19	0
65855	Laser surgery of eye	0	19	0	0	19	0	0	18	1
66761	Revision of iris	0	19	0	0	19	0	0	19	0
66821	Lasering, secondary cataract	0	19	0	0	19	0	0	19	0
66983	Remove cataract, insert lens	0	19	0	0	19	0	0	18	1
66984	Remove cataract, insert lens	0	19	0	0	19	0	0	19	0
66985	Insert lens prosthesis	0	19	0	0	19	0	0	18	1
67010	Partial removal of eye fluid	0	19	0	0	19	0	0	16	3
67036	Removal of inner eye fluid	0	18	1	0	19	0	0	18	1

Table 4.18 (continued)

Review of time data for surgical reference CPT-4 codes -- summary of frequency of judgements: hospital, ICU, and office post-operative visits

		Frequency of judgments								
		Hospital visits			ICU visits			Office visits		
CPT-4	Description	DN	OK	UP	DN	OK	UP	DN	OK	UP
Ophthalmology (continued)										
67107	Repair detached retina	0	19	0	0	19	0	0	18	1
67108	Repair detached retina	0	19	0	0	19	0	0	17	2
67227	Treatment of retinal lesion	0	19	0	0	19	0	0	18	1
67228	Treatment of retinal lesion	0	19	0	0	19	0	0	18	1
Orthopedic surgery										
23472	Reconstruct shoulder joint	0	14	0	0	14	0	0	12	2
24515	Repair humerus fracture	0	14	0	0	14	0	0	14	0
25111	Remove wrist tendon lesion	0	14	0	0	14	0	0	13	1
25605	Treat fracture radius/ulna	0	14	0	0	14	0	0	14	0
25611	Repair fracture radius/ulna	0	12	2	0	14	0	0	14	0
26055	Incise finger tendon sheath	0	14	0	0	14	0	0	14	0
26115	Removal of hand lesion	0	13	1	0	14	0	0	13	1
27091	Removal of hip prosthesis	0	14	0	0	14	0	0	13	1
27125	Partial hip replacement	1	13	0	0	14	0	0	13	1
27130	Total hip replacement	1	13	0	0	14	0	0	13	1
27132	Total hip replacement	1	13	0	0	14	0	0	13	1
27230	Treat fracture of thigh	0	11	3	0	14	0	0	12	2
27236	Repair of thigh fracture	1	13	0	0	13	1	0	13	1
27244	Repair of thigh fracture	0	14	0	0	13	1	0	14	0
27310	Exploration of knee joint	0	12	2	0	14	0	0	13	1
27332	Removal of knee cartilage	1	13	0	0	14	0	0	14	0
27425	Lateral retinacular release	0	14	0	0	14	0	0	12	2
27447	Total knee replacement	3	11	0	0	14	0	0	13	1
27514	Repair of thigh fracture	0	14	0	0	14	0	0	14	0
27524	Repair of kneecap fracture	0	13	1	0	14	0	0	14	0
27814	Repair of ankle fracture	0	14	0	0	14	0	0	13	1
28292	Correction of bunion	1	13	0	0	14	0	0	13	1
29881	Knee arthroscopy/surgery	0	14	0	0	14	0	0	14	0
63017	Removal of spinal lamina	2	12	0	0	14	0	0	12	2
64721	Carpal tunnel surgery	0	14	0	0	14	0	0	13	1

Table 4.18 (continued)

Review of time data for surgical reference CPT-4 codes -- summary of frequency of judgements: hospital, ICU, and office post-operative visits

		Frequency of judgments								
		Hospital visits			ICU visits			Office visits		
CPT-4	Description	DN	OK	UP	DN	OK	UP	DN	OK	UP
Otolaryngology										
21320	Treatment of nose fracture	0	10	0	0	10	0	0	6	4
30520	Repair of nasal septum	0	10	0	0	10	0	0	10	0
31201	Removal of ethmoid sinus	0	10	0	0	10	0	0	10	0
31225	Removal of upper jaw	0	9	1	0	10	0	0	8	2
31255	Removal of ethmoid sinus	0	10	0	0	10	0	0	7	3
31360	Removal of larynx	0	10	0	0	8	2	0	9	1
31603	Incision of windpipe	.	.	.	.	.	.	.	.	.
41120	Partial removal of tongue	0	9	1	0	10	0	0	9	1
41155	Tongue, jaw, & neck surgery	0	8	2	0	8	2	0	9	1
42420	Excise parotid gland/lesion	1	9	0	0	10	0	0	10	0
42440	Excision submaxillary gland	0	9	1	0	10	0	0	9	1
42820	Remove tonsils and adenoids	0	9	1	0	10	0	1	8	1
69433	Create eardrum opening	0	10	0	0	10	0	0	10	0
69631	Repair eardrum structures	0	10	0	0	10	0	0	10	0
69633	Rebuild eardrum structures	0	10	0	0	10	0	1	9	0
69641	Revise middle ear & mastoid	0	10	0	0	10	0	0	8	2
69642	Revise middle ear & mastoid	0	10	0	0	10	0	0	10	0
Cardiothoracic surgery										
32020	Insertion of chest tube	.	.	.	.	.	.	.	.	.
32100	Exploration/biopsy of chest	0	16	1	0	14	3	0	15	2
32480	Partial removal of lung	0	16	1	0	15	2	0	15	2
32500	Partial removal of lung	0	17	0	0	16	1	1	15	1
33206	Insertion of heart pacemaker	0	16	1	0	16	1	0	15	2
33207	Insertion of heart pacemaker	0	16	1	1	15	1	0	15	2
33405	Replacement of aortic valve	1	14	2	0	14	3	1	15	1
33425	Repair of mitral valve	0	14	3	0	13	4	1	14	2
33430	Replacement of mitral valve	0	15	2	0	14	3	1	15	1
33500	Repair heart vessel fistula	0	16	1	0	15	2	0	16	1
33510	Coronary artery bypass	0	16	1	0	15	2	1	15	1
33512	Coronary arteries bypass	0	14	3	0	13	4	2	14	1
33514	Coronary arteries bypass	0	15	2	0	14	3	2	14	1

Table 4.18 (continued)

Review of time data for surgical reference CPT-4 codes -- summary of frequency of judgements: hospital, ICU, and office post-operative visits

		Frequency of judgments								
		Hospital visits			ICU visits			Office visits		
CPT-4	Description	DN	OK	UP	DN	OK	UP	DN	OK	UP
Cardiothoracic surgery (continued)										
33870	Transverse aortic arch graft	0	15	2	1	15	1	2	14	1
35081	Repair defect of artery	1	15	1	0	15	2	0	16	1
35301	Rechanneling of artery	1	16	0	0	17	0	0	16	1
39010	Exploration of chest	0	17	0	0	17	0	1	16	0
39020	Exploration of chest	0	16	1	0	17	0	0	17	0
39400	Visualization of chest	0	17	0	0	17	0	0	17	0
Urology										
50220	Removal of kidney	0	21	0	0	20	1	0	18	3
50230	Removal of kidney	0	19	2	0	16	5	0	18	3
50236	Removal of kidney & ureter	0	20	1	0	20	1	0	18	3
50590	Fragmenting of kidney stone	0	18	3	0	21	0	1	18	2
50780	Reimplant ureter in bladder	0	20	1	0	21	0	1	20	0
51590	Remove bladder; revise tract	0	17	4	0	19	2	0	18	3
51595	Remove bladder; revise tract	0	19	2	0	19	2	0	18	3
52601	Prostatectomy (turp)	0	20	1	0	21	0	0	18	3
54161	Circumcision	0	21	0	0	21	0	0	21	0
54400	Insert semi-rigid prosthesis	1	17	3	0	21	0	0	18	3
54520	Removal of testis	0	20	1	0	21	0	0	18	3
54640	Suspension of testis	0	18	3	0	21	0	0	19	2
55821	Removal of prostate	2	19	0	0	21	0	0	19	2
55831	Removal of prostate	1	19	1	0	21	0	0	18	3
55845	Extensive prostate surgery	1	20	0	0	18	3	1	20	0

Table 4.19

Review of time data for surgical reference CPT-4 codes: summary of judgements by specialty

Specialty	Pre-service time before O.R entry		Intra-time		Immediate pre- and post-op time	
	Percent of physicians agreeing w/ pre-review value	Typical difference w/ pre-review value	Percent of physicians agreeing w/ pre-review value	Typical difference w/ pre-review value	Percent of physicians agreeing w/ pre-review value	Typical difference w/ pre-review value
General Surgery	88%	4.7%	88%	2.1%	90%	2.1%
Neurosurgery	96	0.4	90	2.0	93	1.9
Obstetrics & Gynecology	94	3.1	90	1.0	93	6.0
Ophthalmology	96	1.1	99	0.3	100	0.0
Oral/Maxillofacial Surgery	94	5.0	93	2.6	98	1.2
Orthopedic Surgery	92	3.4	95	1.2	98	0.5
Otolaryngology	88	8.0	95	1.1	97	1.9
Cardiothoracic Surgery	96	2.2	83	4.0	94	1.0
Urology	89	2.9	97	0.7	99	0.3

Table 4.19 (continued)

Review of time data for surgical reference CPT-4 codes: summary of judgements by specialty

Specialty	Number of later same day post visits		Number of post-op hospital visits		Number of post-op ICU visits	
	Percent of physicians agreeing w/ pre-review value	Typical difference w/ pre-review value	Percent of physicians agreeing w/ pre-review value	Typical difference w/ pre-review value	Percent of physicians agreeing w/ pre-review value	Typical difference w/ pre-review value
General Surgery	92%	3.9%	87%	3.1%	92%	6.2%
Neurosurgery	94	0.5	91	1.9	62	33.7
Obstetrics & Gynecology	94	4.9	87	2.7	99	0.6
Ophthalmology	99	1.1	99	1.8	100	0.0
Oral/Maxillofacial Surgery	100	0.4	98	2.4	98	1.3
Orthopedic Surgery	97	2.0	94	3.8	99	0.3
Otolaryngology	99	0.7	96	3.1	98	2.0
Cardiothoracic Surgery	96	1.6	87	3.5	90	7.0
Urology	91	6.1	91	4.7	96	3.2

Table 4.19 (continued)

Review of time data for surgical reference CPT-4 codes: summary of judgements by specialty

Specialty	Number of post-op office visits: Percent of physicians agreeing w/ pre-review value	Number of post-op office visits: Typical difference w/ pre-review value
General Surgery	83%	4.6%
Neurosurgery	88	3.5
Obstetrics & Gynecology	82	4.8
Ophthalmology	96	1.1
Oral/Maxillofacial Surgery	94	1.7
Orthopedic Surgery	94	1.7
Otolaryngology	68	4.7
Cardiothoracic Surgery	90	2.4
Urology	89	2.9

Table 4.20

Post-operative ICU visits adjusted following Assessment Panel review

CPT-4	Description	Number of ICU Visits	
		Pre-Review	Final Data Set
35641	Artery bypass graft	0.0	1.0
61154	Pierce skull, remove clot	0.0	1.0
61312	Open skull for drainage	0.0	1.0
61510	Removal of brain lesion	0.0	1.0
61512	Remove brain lining lesion	0.0	1.0
61518	Removal of brain lesion	0.0	1.0
61520	Removal of brain lesion	0.0	1.0
61700	Inner skull vessel surgery	0.0	1.0

Table 4.21

Definition of intra- and pre- and post-service periods for non-surgical services

Type of service	Intra-Service	Pre- and Post-Service
I. Evaluation and management (medical services)		
Office setting (Visits and Consultations)	Work during the service is: - work while you are with the patient	Work before the service may include: - preparing to see the patient - reviewing records - communicating with other professionals Work after the service may include: - arranging for further services - reviewing results of studies - communicating further with the patient and other professionals, including written telephone reports
Hospital setting Admissions	Work during the service is work while you are present on the patient's hospital unit or floor and may include: - reviewing the patient's chart - seeing the patient - writing notes - communicating with other professionals and the patient's family	Work before and after the service includes directly related work while you are not present on the patient's hospital unit or floor and may include: - further review of records and results of studies - communicating further with other professionals and the patient's family

Note: The total work of a service includes the work during and before and after the service.

Table 4.21 (continued)
Definition of intra- and pre- and post-service periods for non-surgical services

Type of service	Intra-Service	Pre- and Post-Service
I. Evaluation and management services (continued)		
Hospital setting (continued) Consultations and Follow-up Visits	Work during the service is work for the whole day while you are present on the patient's hospital unit or floor and may include: - reviewing the patient's chart - seeing the patient - writing notes - communicating with other professionals and the patient's family	Work before and after the service includes directly related work while you are not present on the patient's hospital unit or floor and may include: - further review of records and results of studies - communicating further with other professionals and the patient's family - written and telephone reports (for consultative services)
Nursing home setting	Work during the service is work for the whole day while you are present in the patient's facility and may include: - reviewing the patient's chart - seeing the patient - writing notes - communicating with other professionals and the patient's family	Work before and after the service includes directly related work while you are not present in the patient's facility and may include: - further review of records and results of studies - communicating further with other professionals
Domicilliary and Home visits	Work for the total service period may include: - reviewing the patient's records - seeing the patient - writing notes - communicating with other professionals and the patient's family	

Note: The total work of a service includes the work during and before and after the service.

Table 4.21 (continued)

Definition of intra- and pre- and post-service periods for non-surgical services

Type of service	Intra-Service	Pre- and Post-Service
I. Evaluation and management services (continued)		
Emergency medicine services	Work for the total service period may include: - reviewing records and interpreting test results or x-rays - seeing the patient - communicating with the patient, the patient's family, and other professionals - completing charts	
II. Laboratory, Imaging, and Testing Services	For these services, the service period is treated as a whole and includes the work from the time you begin the service until you complete it and report your results, if applicable. Includes only the work done by the physician and excludes the work of technicians or other professionals.	

Note: The total work of a service includes your work during and before and after the service.

Table 4.22

Summary of final data elements for selected non-surgical reference services

CPT	Modif	Description	Statistic	Intra-time (mins.)	Total time (mins.)
70551	26	Magnetic image, brain (mri)	Mean		11
			StdErr		7.2
			N		628
71020	26	Chest x-ray	Mean		6
			StdErr		8.3
			N		75
76700	26	Echo exam of abdomen	Mean		24
			StdErr		5.4
			N		107
78461	26	Nuclear scan, heart muscle	Mean		28
			StdErr		6.7
			N		108
88300	26	Tissue exam by pathologist	Mean		4
			StdErr		5.5
			N		456
88309	26	Tissue exam by pathologist	Mean		77
			StdErr		4.6
			N		628
90801		Psychiatric interview	Mean	50	88
			StdErr	0.0	8.3
			N	491	491
91010		Esophagus motility study	Mean		36
			StdErr		11.3
			N		12
92225		Special eye exam, initial	Mean		26
			StdErr		6.5
			N		83
92285		Eye photography	Mean		16
			StdErr		4.6
			N		17
93010		Electrocardiogram report	Mean		5
			StdErr		7.1
			N		204
99202		Office/outpatient visit, new	Mean	20	28
			StdErr	6.0	6.0
			N	999	999
99204		Office/outpatient visit, new	Mean	45	63
			StdErr	6.0	6.0
			N	999	999
99213		Office/outpatient visit, est	Mean	15	21
			StdErr	6.0	6.0
			N	999	999

Table 4.22 (continued)

Summary of final data elements for selected non-surgical reference services

CPT	Modif	Description	Statistic	Intra-time (mins.)	Total time (mins.)
99215		Office/outpatient visit, est	Mean	40	55
			StdErr	6.0	6.0
			N	999	999
99222		Initial hospital care	Mean	50	67
			StdErr	6.0	6.0
			N	999	999
99231		Subsequent hospital care	Mean	15	18
			StdErr	6.0	6.0
			N	999	999
99233		Subsequent hospital care	Mean	35	40
			StdErr	6.0	6.0
			N	999	999
99243		Office consultation	Mean	40	55
			StdErr	6.0	6.0
			N	999	999
99253		Initial inpatient consult	Mean	55	55
			StdErr	6.0	6.0
			N	999	999
99285		Emergency dept visit	Mean		50
			StdErr		6.0
			N		999
99301		Nursing facility care	Mean	30	32
			StdErr	6.0	6.0
			N	999	999

Table 4.23
Sample Fact Sheet: Time data for selected general surgery reference services

Selected Surgical Reference Services

CPT	Pack	Description	Total Work 1993	Time (mins.) Pre-Before O.R. Entry	Intra	Immediate Pre-Post	Later Same Day Post Visits	Type[b]	Hospital Post-op Hospital Visits	Type[b]	ICU Visits	Office Post-op Visits	Type[b]	Number of Responses[a] Intra	Pre-Post
48150	090	Partial removal of pancreas	2999	45	309	78	1.5	10	16.0	15	2.0	5.0	15	12	17
45110	090	Removal of rectum	2152	37	194	72	1.5	10	13.0	10	1.0	5.5	15	97	25
44140	090	Partial removal of colon	1696	33	104	58	1.0	10	8.5	10	0.0	3.5	10	99	25
44120	090	Removal of small intestine	1306	31	95	53	1.0	10	8.5	10	0.0	3.0	10	98	26
38100	090	Removal of spleen, total	1190	32*	91	53	1.0	10	6.0	10	0.0	3.0*	10	98	51
47600	090	Removal of gallbladder	1060	22	64	46	1.0	10	4.0	10	0.0	2.5*	10	197	70
49505	090	Repair inguinal hernia	612	22	48	37	0.5	10	1.0	10	0.0	2.0	10	274	39
44950	090	Appendectomy	602	31	37	40	1.0	10	2.5	10	0.0	2.0*	10	146	31

Selected Non-Surgical Reference Services

Cpt	Description	Total Work 1993	Intra-time (mins.)	Total time (mins.)	Number of Responses
99204	Office/outpatient visit, new	170	45	63	999
99213	Office/outpatient visit, est	55	15	21	999
99231	Subsequent hospital care	55	15	18	999
99243	Office consultation	150	40	55	999

[a] The average number of responses across all the components of pre-post time estimates.
[b] The type of visit is measured by minutes in increments of five.
* Time or visit estimate obtained from prediction rather than survey.

Chapter 5

Task III: Develop Relative Work Values for the Procedures Identified in the Medicare Fee Schedule as Being Paid "By Report"

5.1 Introduction

In the Medicare Fee Schedule (MFS) published in November, 1991, relative values were not provided for approximately 250 surgical CPT codes. These codes were to be treated as "by-report," meaning that the Medicare carriers were to determine their payment on an individual, case-by-case basis. According to HCFA, these codes can be grouped into two categories: 1) procedures at the upper end of the scale of relative work, of low frequency, performed on patients with serious and complex medical problems and 2) procedures characterized by low Medicare frequency for which HCFA felt there was insufficient information to produce relative values.

The objective of Task III was to establish relative values for as many of these codes as possible. To do this, we followed a three step process: classification of services for study; estimation of work using a small group process; and recommendation of work values for each service.

We first classified by-report services into three distinct groups. In the first group are approximately 60 procedure codes for services not described elsewhere in the 1992 edition of CPT. These "unlisted" codes include services that are extremely variable in nature, and have historically been paid by special report. We did not study these services. We classified the remaining codes into those studied previously by us in phase III of the RBRVS study and those not yet studied. As described below, we used different methods for estimating the work of services in each group.

Second, we used the small group process to estimate work for by-report services. After assigning services to individual specialties, we reassembled the RBRVS TCG and Assessment Panels. With the exception of oral and maxillofacial surgery, these were extant panels for the specialties studied. For oral and maxillofacial surgery, we reconvened the TCG from phase I and recruited additional clinicians for an assessment panel. We developed a review process for services previously studied and asked the panelists to assess the existing work estimates. For unstudied services, we asked the panelists to rate the work of each service using magnitude estimation.

Finally, we summarized the information we obtained and provided work values for each code. For previously studied services, the reviews of the panelists were compared with the estimates from phase III. A decision rule was adopted to evaluate changes in work values and recommendations were made for 145 procedures. In general, the panelists showed a high degree of agreement with the phase III values. For the 34 newly studied services, we produced estimates of intra- and total- service work and placed them on the scale common to all specialties.

This chapter describes the methods, data, and results of the study of by-report services. We first describe the classification of procedures, followed by a discussion of the small group processes used and their results.

5.2 Classification of By-Report Services

We classified the by-report codes into three groups: unlisted procedure codes, previously studied services, and unstudied services. Following this classification, we selected the most important specialties to include in the study.

5.2.1 Unlisted Procedure Codes

As described above, CPT includes "unlisted" procedure codes that may be used by the physician to indicate a procedure not specified elsewhere. The five-digit numbering system employed by CPT identifies these codes using a '99' (or occasionally '89' or '49') as the final two digits. The unlisted codes are presented in Appendix Table D.1.

We did not study these codes during our current investigation; they are used to describe a heterogenous group of services requiring extremely variable amounts of work and time. For example, code 27899, "unlisted procedure, leg or ankle" can include procedures ranging from the treatment of an ankle fracture to extensive lower leg surgery. It is not feasible to assign a single value to represent the work of performing the range of services in each unlisted code. We recommend that these procedure codes continue to be reimbursed on a case-by-case basis.

Of the remaining codes, we distinguished between those studied previously, and those not yet studied. Table 5.1 identifies these services and denotes whether they were studied

previously. The table also lists the specialty we assigned to each service based on the clinical nature of the procedure and Medicare claim frequencies. Finally, the rightmost columns of the table provide information on the total number of claims, if available, for each service, from national Medicare[1] and private insurance data.[2]

As shown, of the 227 codes considered for examination, 162 had been studied in phase III, while 65 had not yet been studied. Table 5.2 summarizes these data by specialty. Of the codes studied, the large majority are performed by the specialties of cardiothoracic surgery, general surgery, neurosurgery, orthopedic surgery, and otolaryngology. We selected these specialties for the current study. For the codes not studied previously, almost all were oral and maxillofacial surgery services. We included all these codes for this specialty in the current study with the exception of the prosthetic services (CPT codes 21079 through 21089). Our TCGs informed us these prosthetics are usually constructed in a laboratory and not by oral and maxillofacial surgeons.

Finally, the rightmost columns of Table 5.1 show that the vast majority of by-report codes are performed infrequently. For some procedures, fewer than ten claims were submitted nationally for the service between BMAD and HIAA data.

5.3 Methodology

5.3.1 Assessing the Work of Previously Studied Services

As mentioned above, we used different methods for services studied previously and those not yet studied. During phase III, we obtained estimates of work for the by-report services previously studied using the same small group methods and RBRVS Assessment Panels employed for all other services.[3] However, HCFA decided not to include these values in the MFS until they had been subjected to further analysis. We decided not to re-estimate the work values obtained earlier since our proposed methodology included a small group approach with essentially the same panels of physicians used in phase III. Instead, we developed a review process to assess the existing estimates.

To review the work of by-report services, we used a single survey of the assessment panels for each specialty. We preprinted the intra- and total-service work values that we obtained in phase III on the surveys. For cardiothoracic surgery, orthopedic surgery, and neurosurgery, since the number of services to be reviewed was significant, we grouped clinically related services into procedural families and sorted the services in each family by descending total work. For the remaining specialties, we singly ordered the procedures by descending total-service work. In addition to the survey instrument, we provided the panelists with the reference list developed in Task II for their specialty. (These reference lists are presented in Appendix Table B.1.)

Physicians followed a two-step process in reviewing the work values. First, we asked the panelists to rank order the services by total and intra-service work. For services grouped by procedural family, ranking was done within each family. Second, we asked the panelists to review the total and intra-service work values in the context of the specialty's reference services and where necessary, suggest changes. If a panelist judged the printed values on the survey as unreasonable relative to the reference list, he/she would enter a revised estimate. For those services the respondent did not feel comfortable evaluating, an "NR" (for "no response") was entered.

The survey instruments for the review of by-report codes are included in Appendix F (Cycle 1, Section A for each specialty). Using these instruments, we reviewed the work of 63, 12, 21, 39, and 10 services for cardiothoracic surgery, general surgery, neurosurgery, orthopedic surgery, and otolaryngology, respectively.

5.3.2 Assessing the Work of Newly Studied Services

For newly studied services, we used magnitude estimation with multiple reference services to measure work. To do this, we asked the assessment panelists in oral and maxillofacial surgery to rate the intra-service work of the new services relative to the work values on their reference list (see Appendix Table B.1). We also asked them to estimate the intra- and pre- and post-service time and the number of follow-up visits related to the

procedure. Using the mean estimates of pre- and post-service time and the methods used for all specialties in phase III, we computed pre- and post-service work.[3] We summed intra- and pre- and post-service work to compute total work.

For a small number of reconstruction and osteotomy services included in our initial survey (CPT codes 21193, 21194, 21195, 21196, 21198 and 21206), the panelists informed us that these services are often performed bilaterally. Furthermore, the description employed in the first survey was unclear on whether the services were unilateral or bilateral. As a result, we restudied these services in a second survey, using both unilateral and bilateral descriptions. We report, as final results for this task, the values for the unilateral procedures from the cycle 2 survey. (Results for the bilateral procedures are reported in the next chapter.)

The survey instruments we used for oral and maxillofacial surgery are included in Appendix F. As shown, we studied the work and time for a total of 34 by-report services for this specialty.

5.4 Results

5.4.1 Review of the Work of Previously Studied By-Report Services

We reviewed the work of services studied previously in the specialties of cardiothoracic surgery, general surgery, neurosurgery, orthopedic surgery, and otolaryngology. The number

of panelists surveyed in each of these specialties for this review are summarized in Table 2.2.

Tables 5.3, 5.4 and 5.5 summarize the judgments about the total and intra-service work of the services reviewed. The individual review ratings for each service, from which these summaries were made, are reported in Appendix Table D.2. Table 5.3 describes the frequency of agreement with the phase III value for each service, and when there was disagreement, the direction of the preferred change. The table is organized by specialty and services are presented in the order they appeared on the survey. The first four columns summarize the panelists' judgments about total service work, while the four rightmost columns present the results for intra-service work. The columns for each estimate are labelled "UP," "OK," "DN," and "NR" and display the number of panelists increasing, agreeing with, decreasing, or not evaluating the phase III (pre-review) work value. For example, for CPT code 35549 (artery bypass graft) studied in general surgery, three panelists judged that the phase III value should be increased, one panelist judged it should be decreased, and twelve panelists agreed with the phase III value. Ten panelists did not evaluate the service.

In general, the panelists agreed with the work values from phase III. For 128 of the 145 services reviewed -- 88 percent -- at least half of the respondents in an assessment panel agreed with the initial **total** work estimate. For intra-service work, the proportion was 127 of 145 services, or 87 percent. However,

for a small number of services, the majority of panelists disagreed with the phase III rating.

Table 5.4 summarizes the judgments across services for each specialty. For all specialties, on average almost two-thirds of those providing a rating agreed with the phase III values, about 30 percent judged that the work values should be increased, and less than 10 percent judged the work value should be decreased. By specialty, general surgery and orthopedic surgery show the highest typical agreement with the pre-review work values, while otolaryngology and neurosurgery show the least.

Finally Tables 5.3 and 5.4 indicate that for selected services, significant numbers of panelists did not rate the service. This is particularly true in orthopedic surgery where, on average, two-thirds of the respondents provided no rating. As we discussed above, the large majority of by-report services are infrequently performed or may be performed by a small group of surgeons within a specialty. Judgments for services where a significant portion of the panelists did not feel comfortable responding should be interpreted with caution.

We further analyzed the data, computing means and standard errors of the ratings of each of the specialty panels. The mean value for a service is the mean rating across all physicians providing a judgment, including both those agreeing and disagreeing with the pre-review value. The standard error is computed from these same ratings.

Table 5.5 presents this analysis.* As before, the services are grouped by specialty. The leftmost columns of the table describe the services reviewed. The table also includes (from left to right) pre-review work values from phase III; the mean and standard error of the work ratings provided by the panelists reviewing these values; and the percent difference between the panelists' mean rating and the phase III value.**

As shown in the table, in general, the percent differences between the two ratings are small. For only eight of the 145 services do panelists' mean judgment of total work differ from the pre-review value by more than 10 percent. For intra-service work, the panelists' judgment differed by more than 10 percent from the pre-review value for 26 of 145 services. The standard errors of the mean ratings are also small, suggesting good agreement across panelists. Almost all are less than 10 percent and most are less than 5 percent of the mean rating.

5.4.2 Recommendation of Work Values for By-Report Services Studied Previously

In general, the panelists showed a high degree of agreement with the phase III values for by-report services. However, for

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*All work values in this chapter are reported on the common scale.

**We also include summary statistics for the phase III intra-service work values in Appendix Table D.3. These estimates include the original mean and standard error provided by the phase III panelists for the services presented in Table 5.5. The number of phase III panelists providing a rating of the work of each service is also included.

selected services, the panelists' ratings suggested that the phase III work values need revision. We required a decision rule for evaluating the panelists' judgments and recommending which values to revise.

We explored two different decision rules for revising the phase III work values for by-report services. The first rule involved a comparison of the difference between the phase III and panelists' work values with the standard error of the panelists ratings (a comparison of columns four and six with the rightmost columns in Table 5.5). HCFA, in its refinement of the 1993 MFS, used this type of comparison to revise work values.[4] HCFA asked participants in their Carrier Medical Director (CMD) review process to rate the work of services identified as having questionable work values. HCFA compared the mean rating from the this process with the work value in question. In general, if the difference between the participants' mean rating and the questioned work value was greater than one standard error of their mean ratings, the work value was replaced with the new rating.

An examination of Table 5.5 shows that applying HCFA's "one-standard error" rule to our findings results in revision of a large number of work values. For almost one-half of the services studied, the difference between the participants' mean rating of total work and the phase III value is greater than one standard error of the mean rating. For intra-service work, two-thirds of the values meet this criterion. However, further examination of

the magnitude of the revision in work shows that the changes are small. On average, total and intra-service work would be revised by six and eight percent, respectively, with the majority of the changes being less than five percent.

We rejected the one standard error rule for revising work values for two reasons: first, the magnitude of the change in work for many of the services meeting this rule is unacceptably small. Most changes would be less than five percent, some as small as one percent. Further, almost all of these changes are smaller than the standard errors obtained in the original surveys of these services in phase III (see Appendix Table D.2). Second, for most of the values revised under this rule, the majority of the panelists reviewing the service agreed with the pre-review work value and indicated no revision was necessary.

We adopted a modified version of the one standard error rule. We maintained the one standard error rule as a criterion for revision. However, we added a second criterion: the majority of the panelists rating the pre-review value (service) must disagree with the pre-review value and agree about the direction in which to change it. Values must meet both criteria to be revised.

The work values for which we recommend revision are identified by an asterisk (*) in Table 5.5 to the right of the review work rating. As shown in the table, 8 and 18 total and intra-service values, respectively, are revised. All revisions

involve increases, with the mean change for total and intra-service work being 16 and 17 percent, respectively.

Table 5.6 presents the recommended work values for the 145 by-report codes reviewed. The revised work values are again indicated by an asterisk (*) to the right of the final value. The rightmost column of the table indicates those services where fewer than one-half of the reviewers provided a rating. The results for these services should be interpreted with caution.

5.4.3 Service Work and Time for Newly Studied Services

All the newly estimated by-report services we studied are provided by oral and maxillofacial surgeons. We surveyed 30 members of the assessment panel for oral and maxillofacial surgery for these services.

Tables 5.7 through 5.11 summarize the group estimates for service work and time. Each table includes the mean rating, its standard error, and the number of responses. Table 5.7 presents the estimates of intra-service work and time, while Tables 5.8 through 5.11 summarize the results for pre- and post-service time and visits.

Using mean estimates of pre- and post-service time and the methods used for all surgical services in phase III, we computed pre- and post-service work for each service. The analysis described in Chapter 4 suggested that the estimates of the number of post-operative office visits we obtained in the current study of oral and maxillofacial surgery are biased upward. As a

result, we adjusted the visits shown in Table 5.11 downward by 20 percent before computing pre- and post-service work.

We added intra-service to pre- and post-service work to obtain total service work for each code. These results are presented in Table 5.12.

5.4.4 A Comparison of the Total Work of Newly Studied Services in Oral and Maxillofacial Surgery with Estimates from the 1993 Medicare Fee Schedule

In November, 1992, after we had begun the current study, HCFA published total work values for selected by-report codes in oral and maxillofacial surgery in the 1993 Medicare Fee Schedule (1993 MFS). The values reported by HCFA were developed using its CMD process. As part of this process, HCFA received recommendations on the work values for by-report services from commenters, including specialty societies. The participants in the CMD process reviewed the requested values and decided on values for the 1993 MFS. This process provides us with an opportunity to compare the results from our study with those produced by the CMDs.

Table 5.13 compares the estimates of total-service work from the current study and the 1993 MFS. We also include in the table the requested values from commenters and the ratios of the values from our study to the 1993 MFS values and the requested values. As shown, for two groups of services, the chin reconstructions (CPT codes 21121 through 21133) and the lower jaw bone

reconstructions (CPT codes 21193 through 21206), the 1993 MFS values developed through the CMD process are similar to those we estimated. For the reconstruct midface Lefort I procedures, the current study values are somewhat higher and are closer to the requested values.

5.5 Discussion

We accomplished our objectives for Task III. Using small group processes, we produced work values for 179 of the by-report services identified in the Medicare Fee Schedule. For the 145 services studied previously in phase III, we developed a review process and asked the assessment panelists to evaluate the existing work estimates. Overall, the panelists showed a high degree of agreement with the phase III values. We revised the total work of eight services based on their recommendations. For the 34 newly studied by-report services, we asked the panelists to rate the work of each service using magnitude estimation. We produced estimates of intra- and total-service work for these services and placed them on the scale common to all specialties.

There were three general findings from our current study of the by-report services. First, we found the work values we developed in phase III for the by-report codes to be reliable. For almost 90 percent of these services, at least half of the respondents agreed with the phase III estimates without revision. Further, when revision was suggested, these changes were small.

Second, many of the by-report codes are performed infrequently. When we initially studied these services during phase III, we found that, in many cases, less than five respondents felt qualified to estimate the work and time involved. We observed this result in the current investigation; for 48 of the 145 services studied previously, less than one-half of the reviewers provided a rating. For those who rated these services, we found good agreement with the phase III estimates. The work values that we developed can be used as the basis for developing relative values for the MFS or as a guideline in evaluating claims submitted by physicians. However, given their frequency of performance, the continued payment for these services on a by-report basis is worthy of consideration.

Finally, the small group methods that we developed in phase III, involving magnitude estimation and a reference list, can continue to be employed in measuring the work of new services. We found our panel of oral and maxillofacial surgeons could judge the work and time of the previously unstudied services. They showed good agreement as measured by the standard errors of their mean ratings. Further, the work values produced appeared to have face validity when compared with the other services provided by this profession in the MFS. This finding may, in part, be due to the magnitude estmation method used by the panelists to rate services. As described in Chapter 2, our approach asked the panelists to rate the work of new services relative to those of 15 to 35 services on a reference list for the specialty. The

importance that HCFA and others have placed on the use of a reference list in obtaining new work values or revising the current fee schedule is underlined by our results.

References

1. Health Care Financing Administration: "Public Use File of Physician Services; Part B Provider File, 1988." Washington, DC: Department of Health and Human Services, 1988.

2. Health Insurance Association of America: "Surgical Prevailing Healthcare charges System: March 1990." Washington, DC: HIAA, 1975 and 1990.

3. Hsiao WC, Braun P, Dunn DL, et al: "A National Study of Resource-Based Relative Value Scales for Physician Services: Phase III Study." Final Report to the Health Care Financing Administration. HCFA Contract No. 18-C-98795/1-03. Cambridge, MA: Harvard School of Public Health, 1992.

4. Health Care Financing Administration: Part V: 42 CFR 400 and 405 Medicare Program; Revision of the Medicare Economic Index; Fee Schedule for Physicians' Services for Calendar Year 1993, Physician Performance Standard Rates of Increase for Federal FY 1993 and Physician Fee Schedule Update for Calendar Year 1993; Final Rule and Notices. Department of Health and Human Services. Federal Register. Wednesday, November 25, 1992.

Table 5.1

Claims frequency and study status:
By-report CPT codes in the 1993 MFS excluding unlisted services

SP	CPT	DESCR93	Studied: Phase III	Studied: This study	BMAD FREQ88	HIAA* FREQ90
ps	19396	Design custom breast implant	y	n	4	.
or	20802	Replantation, arm, complete	y	y	2	.
or	20804	Replantation, arm, partial	y	y	.	.
or	20805	Replant forearm, complete	y	y	.	.
or	20806	Replantation,forearm,partial	y	y	1	.
or	20808	Replantation, hand, complete	y	y	1	.
or	20812	Replantation, hand, partial	y	y	1	.
or	20816	Replantation digit, complete	y	y	17	.
or	20820	Replantation, digit, partial	y	y	18	.
or	20822	Replantation digit, complete	y	y	9	.
or	20823	Replantation, digit, partial	y	y	12	.
or	20824	Replantation thumb, complete	y	y	10	.
or	20826	Replantation, thumb, partial	y	y	1	.
or	20827	Replantation thumb, complete	y	y	3	.
or	20828	Replantation, thumb, partial	y	y	3	.
or	20832	Replantation, leg, complete	y	y	.	.
or	20834	Replantation, leg, partial	y	y	.	.
or	20838	Replantation, foot, complete	y	y	.	.
or	20840	Replantation, foot, partial	y	y	2	.
or	20955	Microvascular fibula graft	y	y	10	16
or	20960	Microvascular rib graft	y	y	4	.
or	20962	Microvascular bone graft	y	y	34	.
or	20969	Bone-skin graft	y	y	12	.
or	20970	Bone-skin graft, pelvis	y	y	12	10
or	20971	Bone-skin graft, rib	y	y	.	.
or	20972	Bone-skin graft, metatarsal	y	y	.	.
or	20973	Bone-skin graft, great toe	y	y	2	22
mx	21079	Prepare face/oral prosthesis	n	n	.	.
mx	21080	Prepare face/oral prosthesis	n	n	.	.
mx	21081	Prepare face/oral prosthesis	n	n	.	.
mx	21082	Prepare face/oral prosthesis	n	n	.	.
mx	21083	Prepare face/oral prosthesis	n	n	.	.
mx	21084	Prepare face/oral prosthesis	n	n	.	.
mx	21085	Prepare face/oral prosthesis	n	n	.	.
mx	21086	Prepare face/oral prosthesis	n	n	.	.
mx	21087	Prepare face/oral prosthesis	n	n	.	.
mx	21088	Prepare face/oral prosthesis	n	n	.	.
mx	21089	Prepare face/oral prosthesis	n	n	.	.
mx	21120	Reconstruction of chin	n	y	.	.
mx	21121	Reconstruction of chin	n	y	.	.

*A "." for claims frequency indicates data are not available.

Table 5.1 (continued)

Claims frequency and study status:
By-report CPT codes in the 1993 MFS excluding unlisted services

SP	CPT	DESCR93	Studied: Phase III	Studied: This study	BMAD FREQ88	HIAA* FREQ90
mx	21122	Reconstruction of chin	n	y	.	.
mx	21123	Reconstruction of chin	n	y	.	.
mx	21125	Augmentation lower jaw bone	n	y	.	.
mx	21127	Augmentation lower jaw bone	n	y	.	.
mx	21137	Reduction of forehead	n	y	.	.
mx	21138	Reduction of forehead	n	y	.	.
mx	21139	Reduction of forehead	n	y	.	.
mx	21144	Reconstruct midface, Lefort1	n	y	.	.
mx	21145	Reconstruct midface, Lefort1	n	y	.	.
mx	21146	Reconstruct midface, Lefort1	n	y	.	.
mx	21147	Reconstruct midface, Lefort1	n	y	.	.
mx	21150	Reconstruct midface, Lefort2	n	y	.	.
mx	21151	Reconstruct midface, Lefort2	n	y	.	.
mx	21154	Reconstruct midface, Lefort3	n	y	.	.
mx	21155	Reconstruct midface, Lefort3	n	y	.	.
mx	21159	Reconstruct midface, Lefort3	n	y	.	.
mx	21160	Reconstruct midface, Lefort3	n	y	.	.
mx	21172	Reconstruct orbit/forehead	n	y	.	.
mx	21175	Reconstruct orbit/forehead	n	y	.	.
mx	21179	Reconstruct entire forehead	n	y	.	.
mx	21180	Reconstruct entire forehead	n	y	.	.
mx	21181	Contour cranial bone lesion	n	y	.	.
mx	21182	Reconstruct cranial bone	n	y	.	.
mx	21183	Reconstruct cranial bone	n	y	.	.
mx	21184	Reconstruct cranial bone	n	y	.	.
mx	21188	Reconstruction of midface	n	y	.	.
mx	21193	Reconstruct lower jaw bone	n	y	.	.
mx	21194	Reconstruct lower jaw bone	n	y	.	.
mx	21195	Reconstruct lower jaw bone	n	y	.	.
mx	21196	Reconstruct lower jaw bone	n	y	.	.
mx	21198	Reconstruct lower jaw bone	n	y	.	.
mx	21206	Reconstruct upper jaw bone	n	y	51	594
or	24940	Revision of upper arm	y	y	.	.
or	25915	Amputation of forearm	y	y	.	.
or	26550	Construct thumb replacement	y	y	36	.
or	26552	Construct thumb replacement	y	y	2	.
or	26555	Positional change of finger	y	y	6	.
or	26557	Construct finger replacement	y	y	1	.
or	26558	Added finger surgery	y	y	.	.
or	26559	Added finger surgery	y	y	.	.

*A "." for claims frequency indicates data are not available.

Table 5.1 (continued)

Claims frequency and study status:
By-report CPT codes in the 1993 MFS excluding unlisted services

SP	CPT	DESCR93	Studied: Phase III	Studied: This study	BMAD FREQ88	HIAA* FREQ90
or	26580	Repair hand deformity	y	y	10	.
or	26585	Repair finger deformity	y	y	4	.
or	26587	Reconstruct extra finger	y	y	.	.
or	26590	Repair finger deformity	y	y	6	.
or	28360	Reconstruct cleft foot	y	y	.	.
ot	30400	Reconstruction of nose	y	y	202	533
ot	30410	Reconstruction of nose	y	y	165	1,201
ot	30420	Reconstruction of nose	y	y	810	11,644
ot	30430	Revision of nose	y	y	78	93
ot	30435	Revision of nose	y	y	30	20
ot	30450	Revision of nose	y	y	63	98
ot	31582	Revision of larynx	y	y	49	.
ot	31588	Revision of larynx	y	y	81	9
ot	31590	Reinnervate larynx	y	y	9	.
ot	31755	Repair of windpipe	y	y	196	.
ts	32820	Reconstruct injured chest	y	y	64	.
ts	33350	Repair major blood vessel(s)	y	y	16	.
ts	33407	Revision of aortic valve	y	y	54	28
ts	33408	Revision of aortic valve	y	y	52	.
ts	33412	Replacement of aortic valve	y	y	11	26
ts	33415	Revision, subvalvular tissue	y	y	209	10
ts	33417	Repair of aortic valve	y	y	21	.
ts	33470	Revision of pulmonary valve	y	y	6	.
ts	33472	Revision of pulmonary valve	y	y	2	.
ts	33476	Revision of heart chamber	y	y	4	9
ts	33478	Revision of heart chamber	y	y	3	.
ts	33575	Revise coronary circulation	y	y	616	164
ts	33641	Repair heart septum defect	y	y	193	307
ts	33645	Revision of heart veins	y	y	19	.
ts	33647	Repair heart septum defects	y	y	18	.
ts	33649	Repair tricuspid defect	y	y	9	35
ts	33660	Repair of heart defects	y	y	31	19
ts	33665	Repair of heart defects	y	y	1	.
ts	33670	Repair of heart chamberS	y	y	22	40
ts	33681	Repair heart septum defect	y	y	91	11
ts	33684	Repair heart septum defect	y	y	4	9
ts	33688	Repair heart septum defect	y	y	2	.
ts	33690	Reinforce pulmonary artery	y	y	1	27
ts	33692	Repair of heart defects	y	y	4	52
ts	33694	Repair of heart defects	y	y	4	.

*A "." for claims frequency indicates data are not available.

Table 5.1 (continued)

Claims frequency and study status:
By-report CPT codes in the 1993 MFS excluding unlisted services

SP	CPT	DESCR93	Studied: Phase III	Studied: This study	BMAD FREQ88	HIAA* FREQ90
ts	33696	Repair of heart defects	y	y	3	.
ts	33702	Repair of heart defects	y	y	6	.
ts	33710	Repair of heart defects	y	y	2	.
ts	33720	Repair of heart defect	y	y	34	.
ts	33730	Repair heart-vein defect(s)	y	y	17	18
ts	33735	Revision of heart chamber	y	y	22	.
ts	33737	Revision of heart chamber	y	y	5	.
ts	33738	Revision of heart chamber	y	y	104	42
ts	33739	Revision of heart chamber	y	y	.	.
ts	33750	Major vessel shunt	y	y	106	73
ts	33755	Major vessel shunt	y	y	13	.
ts	33762	Major vessel shunt	y	y	2	.
ts	33764	Major vessel shunt & graft	y	y	2	.
ts	33766	Major vessel shunt	y	y	35	.
ts	33774	Repair great vessels defect	y	y	.	.
ts	33775	Repair great vessels defect	y	y	.	.
ts	33776	Repair great vessels defect	y	y	.	.
ts	33777	Repair great vessels defect	y	y	.	.
ts	33778	Repair great vessels defect	y	y	.	.
ts	33779	Repair great vessels defect	y	y	.	.
ts	33780	Repair great vessels defect	y	y	.	.
ts	33781	Repair great vessels defect	y	y	.	.
ts	33786	Repair arterial trunk	y	y	1	.
ts	33788	Revision of pulmonary artery	y	y	.	.
ts	33802	Repair vessel defect	y	y	3	.
ts	33803	Repair vessel defect	y	y	4	.
ts	33813	Repair septal defect	y	y	.	.
ts	33814	Repair septal defect	y	y	.	.
ts	33820	Revise major vessel	y	y	13	330
ts	33822	Revise major vessel	y	y	.	88
ts	33824	Revise major vessel	y	y	7	.
ts	33830	Revise major vessel	y	y	8	9
ts	33840	Remove aorta constriction	y	y	7	55
ts	33845	Remove aorta constriction	y	y	6	23
ts	33851	Remove aorta constriction	y	y	4	.
ts	33852	Repair septal defect	y	y	.	.
ts	33855	Repair septal defect	y	y	.	.
ts	33935	Transplantation, heart/LUNG	y	n	14	.
ts	33945	Transplantation of heart	y	n	319	224
ts	33960	External circulation assist	y	y	210	182

*A "." for claims frequency indicates data are not available.

Table 5.1 (continued)

Claims frequency and study status:
By-report CPT codes in the 1993 MFS excluding unlisted services

SP	CPT	DESCR93	Studied: Phase III	Studied: This study	BMAD FREQ88	HIAA* FREQ90
gs	34501	Repair valve, femoral vein	y	y	13	.
gs	34510	Transposition of vein valve	y	y	27	.
gs	34520	Cross-over vein graft	y	y	48	.
gs	34530	Leg vein fusion	y	y	13	.
gs	35161	Repair defect of artery	y	y	600	15
gs	35162	Repair artery rupture	y	y	56	.
gs	35548	Artery bypass graft	y	y	117	.
gs	35549	Artery bypass graft	y	y	522	57
gs	35870	Repair vessel graft defect	y	y	87	.
xx	36460	Transfusion service, fetal	n	n	31	51
gs	36835	Artery to vein shunt	y	y	157	.
gs	36840	Insert mandril	y	y	136	.
gs	36845	Fusion with mandril	y	y	50	.
xx	37788	Revascularization, penis	n	n	.	.
gs	39503	Repair of diaphragm hernia	y	n	40	22
gs	47135	Transplantation of liver	y	n	296	192
ur	51940	Correction of bladder defect	y	n	12	.
ur	54440	Repair of penis	y	n	66	.
ur	54670	Repair testis injury	y	n	31	.
ur	55870	Electroejaculation	n	n	.	.
ob	56805	Repair of clitoris	n	n	.	.
ob	57335	Repair of vagina	n	n	.	.
ob	58970	Retrieval of oocyte	n	n	2	.
ob	58972	Fertilization of oocyte	n	n	.	.
ob	58974	Transfer of embryo	n	n	.	.
ob	58976	Transfer of embryo	n	n	.	.
ns	61530	Removal of brain lesion	y	y	36	52
ns	61556	Incise skull/sutures	y	y	.	.
ns	61557	Incise skull/sutures	y	y	.	.
ns	61558	Excision of skull/sutures	y	y	.	.
ns	61559	Excision of skull/sutures	y	y	.	.
ns	61563	Excision of skull tumor	y	y	.	.
ns	61564	Excision of skull tumor	y	y	.	.
ns	61680	Intracranial vessel surgery	y	y	110	61
ns	61682	Intracranial vessel surgery	y	y	36	69
ns	61684	Intracranial vessel surgery	y	y	6	46
ns	61686	Intracranial vessel surgery	y	y	19	51
ns	61692	Intracranial vessel surgery	y	y	7	51
ns	61702	Inner skull vessel surgery	y	y	112	69
ns	62115	Reduction of skull defect	y	y	.	.

*A "." for claims frequency indicates data are not available.

Table 5.1 (continued)

Claims frequency and study status:
By-report CPT codes in the 1993 MFS excluding unlisted services

SP	CPT	DESCR93	Studied: Phase III	Studied: This study	BMAD FREQ88	HIAA* FREQ90
ns	62116	Reduction of skull defect	y	y	.	.
ns	62117	Reduction of skull defect	y	y	.	.
ns	62120	Repair skull cavity lesion	y	y	8	.
ns	63700	Repair of spinal herniation	y	y	15	.
ns	63702	Repair of spinal herniation	y	y	20	.
ns	63704	Repair of spinal herniation	y	y	8	.
ns	63706	Repair of spinal herniation	y	y	8	12
ns	64872	Subsequent repair of nerve	y	n	7	.
ns	64874	Repair & revise nerve	y	n	13	.
ns	64876	Repair nerve; shorten bone	y	n	.	.
op	65125	Revise ocular implant	n	n	.	.
ca	93529	RT, LT heart catheterization	y	n	3	.
ca	93621	Electrophysiology evaluation	y	n	.	.
ca	93622	Electrophysiology evaluation	y	n	.	.
ca	93623	Stimulation, pacing heart	y	n	.	.
ca	93650	Ablate heart dysrhythm focus	y	n	.	.
ca	93660	Tilt table evaluation	n	n	.	.
xx	94642	Aerosol inhalation treatment	n	n	.	.
xx	94772	Breath recording, infant	n	n	.	.
dm	96913	Photochemotherapy, UV-A or B	y	n	.	.
xx	99082	Unusual physician travel	n	n	.	.
xx	99178	Development evaluation tests	n	n	.	.
xx	99431	Initial care, normal newborn	n	n	.	.
xx	99432	Newborn care not in hospital	n	n	.	.
xx	99433	Normal newborn care,hospital	n	n	.	.
xx	99438	Infant care to age one year	n	n	.	.
xx	99440	Newborn resuscitation	n	n	.	.

Specialty abbreviations used are:

gs = general surgery
mx = oral and maxillofacial surgery
ns = neurosurgery
ob = obstetrics and gynecology
op = ophthalmology
dm = dermatology
xx = multiple specialties
or = orthopedics
ot = otolaryngology
ps = plastic surgery
ts = cardiothoracic surgery
ur = urology
ca = cardiology

*A "." for claims frequency indicates data are not available.

Table 5.2

Summary of number of codes and codes previously studied, for By-report CPT codes in the 1992 MFS, by specialty

Specialty	Number of by-report codes	Number previously studied
Cardiology	6	5
Dermatology	1	1
General Surgery	14	14
Neurosurgery	24	24
Obstetrics & Gynecology	6	0
Ophthalmology	1	0
Oral & Maxillofacial Surgery	45	0
Orthopedic Surgery	39	39
Otolaryngology	10	10
Plastic Surgery	1	1
Thoracic Surgery	65	65
Urology	4	3
Multi-Specialty	11	0
All	227	162
	285	

Table 5.3

Summary of frequency of judgments preferred in review of by-report CPT codes: General surgery

CPT	Description	Frequency of judgments							
		Total work				Intra work			
		UP	OK	DN	NR	UP	OK	DN	NR
35549	Artery bypass graft	3	12	1	10	3	10	3	10
35548	Artery bypass graft	2	11	4	9	4	11	2	9
35162	Repair artery rupture	4	10	2	10	3	11	2	10
35161	Repair defect of artery	4	10	2	10	4	10	2	10
35870	Repair vessel graft defect	12	5	0	9	12	5	0	9
34520	Cross-over vein graft	1	15	1	9	2	15	0	9
34510	Transposition of vein valve	2	12	0	12	2	12	0	12
34530	Leg vein fusion	3	13	0	10	3	13	0	10
34501	Repair valve, femoral vein	1	12	1	12	2	12	0	12
36835	Artery to vein shunt	1	11	1	13	1	11	1	13
36845	Fusion with mandril	1	12	1	12	1	12	1	12
36840	Insert mandril	1	11	1	13	2	11	0	13

Table 5.3 (continued)

Summary of frequency of judgments preferred in review of by-report CPT codes: Neurosurgery

CPT	Description	Frequency of judgments: Total work UP	Total work OK	Total work DN	Total work NR	Intra work UP	Intra work OK	Intra work DN	Intra work NR
Family A -- Craniectomy or Craniotomy									
61530	Removal of brain lesion	5	11	0	0	5	11	0	0
61564	Excision of skull tumor	6	5	5	0	7	6	3	0
61559	Excision of skull/sutures	8	6	2	0	9	7	0	0
61563	Excision of skull tumor	2	9	5	0	2	11	3	0
61558	Excision of skull/sutures	6	8	2	0	6	9	1	0
61557	Incise skull/sutures	3	11	2	0	4	10	2	0
61556	Incise skull/sutures	3	10	3	0	4	10	2	0
Family B -- Surgery for Aneurysm, Arteriovenous Malformation or Vascular Disease									
61686	Intracranial vessel surgery	2	12	2	0	3	12	1	0
61682	Intracranial vessel surgery	6	10	0	0	6	10	0	0
61684	Intracranial vessel surgery	4	9	3	0	7	7	2	0
61702	Inner skull vessel surgery	11	5	0	0	11	5	0	0
61692	Intracranial vessel surgery	6	6	3	1	8	5	2	1
61680	Intracranial vessel surgery	7	8	1	0	9	7	0	0
Family C -- Repair - Skull, Meninges, and Brain									
62120	Repair skull cavity lesion	2	8	3	3	3	8	2	3
62117	Reduction of skull defect	7	5	0	4	7	5	0	4
62116	Reduction of skull defect	5	7	0	4	7	5	0	4
62115	Reduction of skull defect	4	8	0	4	5	6	1	4
Family D -- Repair - Spine and Spinal Cord									
63706	Repair of spinal herniation	4	7	2	3	7	6	0	3
63704	Repair of spinal herniation	5	7	1	3	7	6	0	3
63702	Repair of spinal herniation	3	8	2	3	4	7	2	3
63700	Repair of spinal herniation	3	8	2	3	4	7	2	3

Table 5.3 (continued)

Summary of frequency of judgments preferred in review of by-report CPT codes: Otolaryngology

CPT	Description	Frequency of judgments							
		Total work				Intra work			
		UP	OK	DN	NR	UP	OK	DN	NR
31582	Revision of larynx	4	5	0	1	5	4	0	1
31590	Reinnervate larynx	2	3	4	1	2	5	2	1
31588	Revision of larynx	4	4	1	1	3	6	0	1
30450	Revision of nose	4	3	2	1	3	4	2	1
30420	Reconstruction of nose	5	3	1	1	5	4	0	1
30410	Reconstruction of nose	4	4	1	1	6	3	0	1
30400	Reconstruction of nose	2	5	2	1	3	4	2	1
31755	Repair of windpipe	2	5	2	1	4	5	0	1
30435	Revision of nose	3	5	1	1	2	6	1	1
30430	Revision of nose	0	7	2	1	1	6	2	1

Table 5.3 (continued)

Summary of frequency of judgments preferred in review of by-report CPT codes: Orthopedic surgery

CPT	Description	Frequency of judgments: Total work UP	OK	DN	NR	Intra work UP	OK	DN	NR
Family A -- Replantation									
20808	Replantation, hand, complete	0	5	0	8	0	5	0	8
20805	Replant forearm, complete	0	4	1	8	0	4	1	8
20812	Replantation, hand, partial	1	4	0	8	0	4	1	8
20806	Replantation,forearm,partial	0	5	0	8	0	5	0	8
20802	Replantation, arm, complete	1	4	0	8	0	5	0	8
20832	Replantation, leg, complete	1	2	1	9	1	2	1	9
20838	Replantation, foot, complete	1	2	1	9	3	1	0	9
20804	Replantation, arm, partial	2	3	0	8	2	3	0	8
20824	Replantation thumb, complete	0	4	1	8	0	4	1	8
20834	Replantation, leg, partial	1	2	1	9	2	1	1	9
20840	Replantation, foot, partial	2	2	0	9	3	1	0	9
20826	Replantation, thumb, partial	1	3	1	8	0	4	1	8
20816	Replantation digit, complete	0	4	1	8	0	4	1	8
20820	Replantation, digit, partial	0	4	1	8	0	4	1	8
20827	Replantation thumb, complete	0	4	1	8	0	4	1	8
20822	Replantation digit, complete	0	4	1	8	0	4	1	8
20828	Replantation, thumb, partial	0	4	1	8	0	4	1	8
20823	Replantation, digit, partial	0	4	1	8	0	4	1	8
Family B -- Grafts									
20955	Microvascular fibula graft	1	2	1	9	2	2	0	9
20962	Microvascular bone graft	0	3	1	9	2	2	0	9
20970	bone-skin graft, pelvis	0	3	1	9	2	2	0	9
20973	bone-skin graft, great toe	0	3	1	9	2	2	0	9
20960	Microvascular rib graft	2	2	0	9	2	2	0	9
20969	bone-skin graft	2	2	0	9	2	2	0	9
20971	bone-skin graft, rib	2	2	0	9	2	2	0	9
20972	bone-skin graft, metatarsal	2	2	0	9	2	2	0	9

Table 5.3 (continued)

Summary of frequency of judgments preferred in review of by-report CPT codes: Orthopedic surgery

CPT	Description	Frequency of judgments: Total work UP	Total work OK	Total work DN	Total work NR	Intra work UP	Intra work OK	Intra work DN	Intra work NR
Family C -- Repair, Revision, Reconstruction - Hand and Fingers									
26552	Construct thumb replacement	0	3	2	8	2	3	0	8
26550	Construct thumb replacement	1	3	1	8	2	3	0	8
26557	Construct finger replacement	1	4	0	8	1	4	0	8
26580	Repair hand deformity	0	4	0	9	0	4	0	9
26555	Positional change of finger	2	3	0	8	3	2	0	8
26559	Added finger surgery	1	4	0	8	1	4	0	8
26590	Repair finger deformity	1	3	0	9	1	3	0	9
26558	Added finger surgery	0	4	1	8	0	4	1	8
26585	Repair finger deformity	1	3	0	9	1	3	0	9
26587	Reconstruct extra finger	2	2	1	8	2	2	1	8
Family D -- Miscellaneous									
24940	Revision of upper arm	0	3	0	10	0	3	0	10
25915	Amputation of forearm	0	3	0	10	1	2	0	10
28360	Reconstruct cleft foot	2	1	0	10	3	0	0	10

Table 5.3 (continued)

Summary of frequency of judgments preferred in review of by-report CPT codes: Cardiothoracic surgery

CPT	Description	Frequency of judgments: Total work UP	OK	DN	NR	Intra work UP	OK	DN	NR
Family A -- Cardiac Valves - Aortic Valves									
33412	Replacement of aortic valve	6	7	0	1	6	7	0	1
33415	Revision, subvalvular tissue	4	9	0	1	5	8	0	1
33407	Revision of aortic valve	2	10	1	1	3	10	0	1
33417	Repair of aortic valve	5	8	0	1	6	7	0	1
33408	Revision of aortic valve	5	6	0	3	5	6	0	3
Family B -- Cardiac Valves - Pulmonary Valve									
33478	Revision of heart chamber	3	6	0	5	3	6	0	5
33476	Revision of heart chamber	3	6	0	5	3	6	0	5
33472	Revision of pulmonary valve	2	7	1	4	3	7	0	4
33470	Revision of pulmonary valve	2	5	1	6	2	6	0	6
Family C -- Cardiac Valves - Septal Defect									
33649	Repair tricuspid defect	2	5	0	7	3	4	0	7
33696	Repair of heart defects	3	5	0	6	4	4	0	6
33694	Repair of heart defects	3	5	0	6	4	4	0	6
33692	Repair of heart defects	3	5	0	6	4	4	0	6
33665	Repair of heart defects	3	5	0	6	3	5	0	6
33670	Repair of heart chambers	3	4	0	7	2	5	0	7
33660	Repair of heart defects	1	6	0	7	2	5	0	7
33684	Repair heart septum defect	2	4	1	7	2	4	1	7
33688	Repair heart septum defect	4	4	0	6	4	4	0	6
33647	Repair heart septum defects	2	6	0	6	2	6	0	6
33645	Revision of heart veins	2	6	0	6	2	6	0	6
33681	Repair heart septum defect	4	4	0	6	4	4	0	6
33641	Repair heart septum defect	2	5	1	6	2	6	0	6
33690	Reinforce pulmonary artery	3	4	1	6	3	4	1	6

Table 5.3 (continued)

Summary of frequency of judgments preferred in review of by-report CPT codes: Cardiothoracic surgery

CPT	Description	Frequency of judgments: Total work UP	OK	DN	NR	Intra work UP	OK	DN	NR
Family D -- Cardiac Valves - Sinus of Valsalva									
33710	Repair of heart defects	1	11	0	2	2	10	0	2
33702	Repair of heart defects	1	11	0	2	2	10	0	2
33720	Repair of heart defect	2	10	0	2	2	10	0	2
Family E -- Cardiac Valves - Shunting Procedures									
33766	Major vessel shunt	2	4	1	7	1	5	1	7
33737	Revision of heart chamber	2	4	1	7	1	5	1	7
33762	Major vessel shunt	2	4	0	8	2	4	0	8
33764	Major vessel shunt & graft	3	4	0	7	3	4	0	7
33735	Revision of heart chamber	2	4	1	7	3	4	0	7
33755	Major vessel shunt	3	4	0	7	3	4	0	7
33750	Major vessel shunt	3	4	0	7	3	4	0	7
33739	Revision of heart chamber	1	3	0	10	1	3	0	10
33738	Revision of heart chamber	1	3	0	10	1	3	0	10
Family F -- Cardiac Valves - Transposition of the Great Vessels									
33780	Repair great vessels defect	3	3	0	8	3	3	0	8
33781	Repair great vessels defect	3	3	0	8	3	3	0	8
33779	Repair great vessels defect	3	3	0	8	3	3	0	8
33776	Repair great vessels defect	3	4	0	7	3	4	0	7
33775	Repair great vessels defect	3	4	0	7	3	4	0	7
33777	Repair great vessels defect	3	4	0	7	3	4	0	7
33774	Repair great vessels defect	3	4	1	6	3	4	1	6
33778	Repair great vessels defect	3	3	0	8	3	3	0	8

Table 5.3 (continued)

Summary of frequency of judgments preferred in review of by-report CPT codes: Cardiothoracic surgery

CPT	Description	Frequency of judgments: Total work UP	OK	DN	NR	Intra work UP	OK	DN	NR
Family G -- Cardiac Valves - Aortic Anomalies									
33814	Repair septal defect	2	4	1	7	2	4	1	7
33852	Repair septal defect	4	3	0	7	4	3	0	7
33855	Repair septal defect	4	2	0	8	4	2	0	8
33851	Remove aorta constriction	2	5	0	7	2	5	0	7
33845	Remove aorta constriction	3	5	0	6	3	5	0	6
33813	Repair septal defect	1	4	1	8	1	4	0	9
33840	Remove aorta constriction	4	5	1	5	2	7	0	6
33803	Repair vessel defect	1	6	1	6	1	6	0	7
33802	Repair vessel defect	2	6	1	5	2	6	0	6
33824	Revise major vessel	3	5	1	5	3	5	0	6
33822	Revise major vessel	3	5	1	5	3	5	0	6
33830	Revise major vessel	2	5	2	5	2	6	0	6
33820	Revise major vessel	3	5	1	5	2	6	0	6
Family I -- Miscellaneous									
33350	Repair major blood vessel(s)	1	5	2	6	2	6	0	6
33786	Repair arterial trunk	4	3	0	7	3	4	0	7
33575	Revise coronary circulation	2	5	1	6	2	6	0	6
32820	Reconstruct injured chest	2	4	1	7	2	5	0	7
33730	Repair heart-vein defect(s)	4	3	0	7	2	5	0	7
33788	Revision of pulmonary artery	3	4	0	7	2	5	0	7
33960	External circulation assist	2	5	1	6	2	5	1	6

Key: UP= physician increased review value
OK= physician agreed with review value
DN= physician decreased review value
NR= physician did not rate service

Table 5.4

Summary of judgments: Review of phase III values for by-report CPT codes by specialty, by percent of total judgments

Specialty	Number		Percent of All Physicians*		Percent of physicians (excluding those not rating)** Total			Intra		
	Codes studied	Physicians	Rating	Not rating	UP	OK	DN	UP	OK	DN
General Surgery	12	26	59%	41%	18%	74%	8%	20%	74%	6%
Neurosurgery	21	16	92	8	33	55	12	41	52	7
Orthopedic Surgery	39	13	34	66	18	70	12	27	65	7
Otolaryngology	10	10	90	10	33	49	18	38	52	10
Cardiothoracic Surgery	63	14	58	42	34	61	5	34	64	2
All	145	79	59	41	28	63	9	33	62	5

*Average percent of physicians rating and not rating (NR) across all services studied for the specialty. Not rating (NR), indicates that the physician provided no judgment about a service.

**Average percent of physicians increasing (UP), agreeing with (OK), and decreasing (DN) the pre-review work value. Computed across all services studied in that specialty.

Table 5.5
Summary of review of work values for by-report CPT codes: Neurosurgery

CPT	Service	Pre-review work values Total	Pre-review work values Intra	Review work rating[a] Total	Review work rating[a] Std. err.	Review work rating[a] Intra	Review work rating[a] Std. err.	Percent diff. Pre-review vs. review TW	Percent diff. Pre-review vs. review IW
Family A -- Craniectomy or Craniotomy									
61530	Removal of brain lesion	4135	3380	4205	0.8%	3487	1.4%	1.7%	3.2%
61564	Excision of skull tumor	2650	1800	2822	4.1	2031	5.3	6.5	12.8
61559	Excision of skull/sutures	2450	1635	2799	4.8	1998*	7.0	14.2	22.2
61563	Excision of skull tumor	2300	1520	2297	2.3	1544	3.3	-0.1	1.6
61558	Excision of skull/sutures	2250	1450	2371	3.5	1579	5.1	5.4	8.9
61557	Incise skull/sutures	2110	1395	2036	3.8	1341	5.2	-3.5	-3.9
61556	Incise skull/sutures	2025	1325	1945	4.8	1273	5.2	-4.0	-4.0
Family B -- Surgery for Aneurysm, Arteriovenous Malformation or Vascular Disease									
61686	Intracranial vessel surgery	4710	3910	4721	0.6	3941	0.6	0.2	0.8
61682	Intracranial vessel surgery	4190	3445	4307	1.0	3564	1.4	2.8	3.4
61684	Intracranial vessel surgery	3895	3000	3915	0.7	3076	1.1	0.5	2.5
61702	Inner skull vessel surgery	3890	3100	4086*	1.4	3337*	1.8	5.0	7.6
61692	Intracranial vessel surgery	3770	2890	3817	1.3	2998*	1.4	1.3	3.8
61680	Intracranial vessel surgery	3620	2810	3712	0.9	2935*	1.1	2.5	4.5
Family C -- Repair - Skull, Meninges, and Brain									
62120	Repair skull cavity lesion	2210	1510	2218	2.2	1562	2.4	0.3	3.5
62117	Reduction of skull defect	1655	1035	1968*	5.5	1369*	9.3	18.9	32.3
62116	Reduction of skull defect	1540	935	1736	5.7	1156*	9.0	12.9	23.6
62115	Reduction of skull defect	1355	810	1545	6.2	1001	9.3	14.0	23.5
Family D -- Repair - Spine and Spinal Cord									
63706	Repair of spinal herniation	1765	1135	1800	2.2	1257*	3.3	2.0%	10.7%
63704	Repair of spinal herniation	1465	890	1535	3.1	1012*	4.4	4.5	13.7
63702	Repair of spinal herniation	1360	840	1376	4.6	892	5.2	1.2	6.2
63700	Repair of spinal herniation	1130	660	1168	6.2	700	6.7	3.4	12.1

[a] Review mean total and intra work rating and standard error reported as a percent of the respective mean.
* Majority of reviewers agreed with the direction of change for review value and mean review work rating differs from pre-review value by more than one standard error.

Table 5.5 (continued)

Summary of review of work values for by-report CPT codes:
General Surgery

CPT	Service	Pre-review work values Total	Intra	Review work rating[a] Total	Std. err.	Intra	Std. err.	Percent diff. Pre-review vs. review TW	IW
35549	Artery bypass graft	2155	1425	2175	1.0%	1422	1.5%	0.9%	-0.2%
35548	Artery bypass graft	2005	1295	1998	1.0	1271	2.3	-0.4	-1.8
35162	Repair artery rupture	1780	1050	1833	2.6	1087	3.7	3.0	3.5
35161	Repair defect of artery	1675	970	1732	2.4	998	3.0	3.4	2.9
35870	Repair vessel graft defect	1620	860	2021*	4.6	1198*	6.6	24.8	39.3
34520	Cross-over vein graft	1225	600	1224	0.1	607	0.9	-0.1	1.2
34510	Transposition of vein valve	1155	505	1167	0.8	528	3.0	1.0	4.5
34530	Leg vein fusion	1010	445	1034	1.3	475	3.8	2.4	6.7
34501	Repair valve, femoral vein	960	410	964	2.3	428	3.2	0.4	4.5
36835	Artery to vein shunt	655	325	649	2.5	327	1.4	-0.9	0.6
36845	Fusion with mandril	520	325	532	2.6	326	1.0	2.3	0.2
36840	Insert mandril	415	150	411	1.4	156	2.7	-1.0	3.9

[a] Review mean total and intra work rating and standard error reported as a percent of the respective mean.

* Majority of reviewers agreed with the direction of change for review value and mean review work rating differs from pre-review value by more than one standard error.

Table 5.5 (continued)

Summary of review of work values for by-report CPT codes:
Otolaryngology

CPT	Service	Pre-review work values Total	Intra	Review work rating[a] Total	Std. err.	Intra	Std. err.	Percent diff. Pre-review vs. review TW	IW
31582	Revision of larynx	1285	750	1385	4.5%	803*	4.0%	7.8%	7.0%
31590	Reinnervate larynx	1180	680	1080	4.8	672	2.7	-8.5	-1.2
31588	Revision of larynx	1125	700	1185	6.3	765	5.5	5.3	9.3
30450	Revision of nose	1030	715	1113	4.6	743	4.5	8.1	4.0
30420	Reconstruction of nose	980	650	1023	4.6	710*	3.7	4.4	9.3
30410	Reconstruction of nose	950	635	978	2.0	676*	2.2	2.9	6.4
30400	Reconstruction of nose	885	595	869	3.1	600	3.2	-1.8	0.9
31755	Repair of windpipe	785	310	761	11.1	342	6.0	-3.0	10.4
30435	Revision of nose	770	500	752	5.4	495	2.9	-2.3	-1.0
30430	Revision of nose	580	360	550	4.2	345	4.5	-5.2	-4.0

[a] Review mean total and intra work rating and standard error reported as a percent of the respective mean.

* Majority of reviewers agreed with the direction of change for review value and mean review work rating differs from pre-review value by more than one standard error.

Table 5.5 (continued)
Summary of review of work values for by-report CPT codes: Orthopedic Surgery

CPT	Service	Pre-review work values Total	Intra	Review work rating[a] Total	Std. err.	Intra	Std. err.	Percent diff. Pre-review vs. review TW	IW
Family A -- Replantation									
20808	Replantation, hand, complete	2900	1935	2900	0.0%	1935	0.0%	0.0%	0.0%
20805	Replant forearm, complete	2880	1910	2856	0.9	1896	0.7	-0.8	-0.7
20812	Replantation, hand, partial	2760	1840	2784	0.9	1854	0.7	0.9	0.7
20806	Replantation,forearm,partial	2710	1770	2717	0.0	1770	0.0	0.0	0.0
20802	Replantation, arm, complete	2680	1745	2697	0.6	1745	0.0	0.6	0.0
20832	Replantation, leg, complete	2645	1630	2612	1.6	1644	2.1	-1.3	0.9
20838	Replantation, foot, complete	2620	1590	2608	1.2	1639*	2.1	-0.4	3.1
20804	Replantation, arm, partial	2475	1580	2513	1.0	1596	0.7	1.5	1.0
20824	Replantation thumb, complete	2070	1460	2013	2.8	1399	4.4	-2.8	-4.2
20834	Replantation, leg, partial	2065	1175	2127	4.2	1287	9.8	3.0	9.5
20840	Replantation, foot, partial	2035	1145	2150	5.2	1282*	10.1	5.7	12.0
20826	Replantation, thumb, partial	2005	1420	1967	2.7	1361	4.3	-1.9	-4.1
20816	Replantation digit, complete	1985	1360	1936	2.6	1303	4.3	-2.5	-4.2
20820	Replantation, digit, partial	1895	1330	1832	3.4	1256	5.9	-3.3	-5.5
20827	Replantation thumb, complete	1880	1285	1837	2.3	1234	4.1	-2.3	-4.0
20822	Replantation digit, complete	1835	1245	1796	2.1	1203	3.5	-2.1	-3.3
20828	Replantation, thumb, partial	1815	1260	1770	2.6	1203	4.7	-2.5	-4.5
20823	Replantation, digit, partial	1775	1220	1739	2.1	1172	4.1	-2.1	-3.9
Family B -- Grafts									
20955	Microvascular fibula graft	2105	1235	2131	1.9	1308	3.4	1.3	5.9
20962	Microvascular bone graft	2070	1275	2069	0.1	1329	2.5	-0.1	4.2
20970	Bone-skin graft, pelvis	2070	1235	2069	0.1	1308	3.4	-0.1	5.9
20973	Bone-skin graft, great toe	2070	1245	2069	0.1	1313	3.2	-0.1	5.5
20960	Microvascular rib graft	2040	1195	2049	0.3	1272	3.9	0.3	3.9
20969	Bone-skin graft	2010	1195	2034	0.7	1272	3.9	1.2	6.5
20971	Bone-skin graft, rib	1975	1195	2016	1.2	1272	3.9	2.1	6.5
20972	Bone-skin graft, metatarsal	1975	1195	2016	1.2	1272	3.9	2.1	6.5

[a] Review mean total and intra work rating and standard error reported as a percent of the respective mean.
* Majority of reviewers agreed with the direction of change for review value and mean review work rating differs from pre-review value by more than one standard error.

Table 5.5 (continued)

Summary of review of work values for by-report CPT codes:
Orthopedic Surgery

CPT	Service	Pre-review work values Total	Intra	Review work rating[a] Total	Std. err.	Intra	Std. err.	Percent diff. Pre-review vs. review TW	IW
Family C -- Repair, Revision, Reconstruction - Hand and Fingers									
26552	Construct thumb replacement	2160	1340	2115	2.1%	1389	2.4%	2.1%	2.4%
26550	Construct thumb replacement	1405	955	1420	1.1	998	2.9	1.1	2.9
26557	Construct finger replacement	1370	760	1447	5.6	859	13.0	5.6	13.0
26580	Repair hand deformity	1270	835	1270	0.0	835	0.0	0.0	0.0
26555	Positional change of finger	1080	670	1135	3.7	745*	7.9	5.1	11.2
26559	Added finger surgery	1010	640	1045	3.5	669	4.6	3.5	4.6
26590	Repair finger deformity	995	635	1064	6.9	662	4.2	6.9	4.2
26558	Added finger surgery	985	640	920	7.1	621	3.1	-6.6	-3.0
26585	Repair finger deformity	970	625	982	1.3	637	1.9	1.3	1.9
26587	Reconstruct extra finger	750	445	764	13.4	494	9.9	1.9	11.0
Family D -- Miscellaneous									
24940	Revision of upper arm	1885	1255	1885	0.0	1255	0.0	0.0	0.0
25915	Amputation of forearm	1365	815	1365	0.0	901	10.5	0.0	10.5
28360	Reconstruct cleft foot	860	465	1098*	15.1	723*	12.5	27.7	55.5

[a] Review mean total and intra work rating and standard error reported as a percent of the respective mean.

* Majority of reviewers agreed with the direction of change for review value and mean review work rating differs from pre-review value by more than one standard error.

Table 5.5 (continued)
Summary of review of work values for by-report CPT codes: Cardiothoracic Surgery

CPT	Service	Pre-review work values Total	Intra	Review work rating[a] Total	Std. err.	Intra	Std. err.	Percent diff. Pre-review vs. review TW	IW
Family A -- Cardiac Valves - Aortic Valves									
33412	Replacement of aortic valve	3205	2300	3384	1.9%	2444	2.4%	5.6%	6.2%
33415	Revision, subvalvular tissue	2485	1560	2556	1.3	1654	2.5	2.9	6.0
33407	Revision of aortic valve	2305	1400	2321	0.9	1448	1.8	0.7	3.4
33417	Repair of aortic valve	2230	1375	2278	1.1	1456	2.2	2.2	5.9
33408	Revision of aortic valve	1975	1000	2048	1.5	1102	3.7	3.7	10.2
Family B -- Cardiac Valves - Pulmonary Valve									
33478	Revision of heart chamber	2345	1300	2482	3.4	1393	3.7	5.8	7.1
33476	Revision of heart chamber	2145	1260	2295	3.6	1378	4.9	7.0	9.3
33472	Revision of pulmonary valve	1940	965	1961	3.5	1042	5.6	1.1	8.0
33470	Revision of pulmonary valve	1705	870	1702	3.3	895	1.8	-0.2	2.8
Family C -- Cardiac Valves - Septal Defect									
33649	Repair tricuspid defect	3655	2110	3742	2.2	2266	4.3	2.4	7.4
33696	Repair of heart defects	3320	2150	3448	2.0	2268	2.9	3.8	5.5
33694	Repair of heart defects	3320	2075	3371	2.4	2201	3.3	4.7	6.1
33692	Repair of heart defects	3105	2000	3223	2.2	2129	3.4	3.8	6.4
33665	Repair of heart defects	3075	1965	3213	2.7	2090	4.2	4.5	6.4
33670	Repair of heart chambers	3065	2235	3196	2.4	2301	1.9	4.3	3.0
33660	Repair of heart defects	3030	1915	3040	0.3	1978	2.6	0.3	3.3
33684	Repair heart septum defect	2980	1845	3049	3.4	1931	5.2	2.3	4.7
33688	Repair heart septum defect	2860	1740	2992	3.5	1878	5.4	4.6	7.9
33647	Repair heart septum defects	2750	1795	2798	1.5	1831	2.0	1.7	2.0
33645	Revision of heart veins	2260	1360	2371	3.6	1445	4.9	4.9	6.2
33681	Repair heart septum defect	2195	1315	2369	4.3	1464	5.9	7.9	11.3
33641	Repair heart septum defect	1980	1200	2063	5.6	1294	7.2	4.2	7.8
33690	Reinforce pulmonary artery	1600	695	1692	3.7	761	6.8	5.8	9.4

[a] Review mean total and intra work rating and standard error reported as a percent of the respective mean.
* Majority of reviewers agreed with the direction of change for review value and mean review work rating differs from pre-review value by more than one standard error.

Table 5.5 (continued)
Summary of review of work values for by-report CPT codes: Cardiothoracic Surgery

CPT	Service	Pre-review work values Total	Intra	Review work rating[a] Total	Std. err.	Intra	Std. err.	Percent diff. Pre-review vs. review TW	IW
Family D -- Cardiac Valves - Sinus of Valsalva									
33710	Repair of heart defects	3245	2185	3266	0.6%	2204	0.6%	0.6%	0.9%
33702	Repair of heart defects	2915	1860	2922	0.2	1883	0.8	0.2	1.2
33720	Repair of heart defect	2850	1950	2896	1.5	2004	1.9	1.6	2.8
Family E -- Cardiac Valves - Shunting Procedures									
33766	Major vessel shunt	1970	975	2008	2.4	967	1.3	1.9	-0.8
33737	Revision of heart chamber	1965	930	1998	2.7	932	1.5	1.7	0.2
33762	Major vessel shunt	1950	850	1960	0.4	874	1.9	0.5	2.8
33764	Major vessel shunt & graft	1895	845	1920	0.8	881	2.4	1.3	4.3
33735	Revision of heart chamber	1880	830	1938	3.3	856	1.9	3.1	3.2
33755	Major vessel shunt	1880	830	1904	0.8	855	1.9	1.3	3.1
33750	Major vessel shunt	1745	845	1806	2.0	880	2.4	3.5	4.1
33739	Revision of heart chamber	1585	685	1589	0.2	689	0.5	0.2	0.5
33738	Revision of heart chamber	1245	480	1304	4.8	485	1.0	4.8	1.0
Family F -- Cardiac Valves - Transposition of the Great Vessels									
33780	Repair great vessels defect	3165	2000	3417	5.0	2245	7.4	8.0	12.2
33781	Repair great vessels defect	3165	2000	3417	5.0	2245	7.4	8.0	12.2
33779	Repair great vessels defect	3145	1980	3392	4.9	2217	7.6	7.9	12.0
33776	Repair great vessels defect	3050	1955	3205	4.0	2103	6.2	5.1	7.6
33775	Repair great vessels defect	3010	1925	3162	4.1	2073	6.4	5.1	7.7
33777	Repair great vessels defect	2905	1925	3080	4.2	2063	6.0	6.0	7.1
33774	Repair great vessels defect	2815	1735	2841	6.0	1828	6.9	0.9	5.4
33778	Repair great vessels defect	2705	1790	3014	6.5	2040	8.6	11.4	13.9

[a] Review mean total and intra work rating and standard error reported as a percent of the respective mean.
* Majority of reviewers agreed with the direction of change for review value and mean review work rating differs from pre-review value by more than one standard error.

Table 5.5 (continued)

Summary of review of work values for by-report CPT codes: Cardiothoracic Surgery

CPT	Service	Pre-review work values Total	Intra	Review work rating[a] Total	Std. err.	Intra	Std. err.	Percent diff. Pre-review vs. review TW	IW
Family G -- Cardiac Valves - Aortic Anomalies									
33814	Repair septal defect	2225	1270	2255	1.6%	1302	2.4%	1.6%	2.4%
33852	Repair septal defect	2165	1265	2356*	4.9	1414*	6.9	8.8	11.8
33855	Repair septal defect	2125	1270	2737*	12.6	1632*	12.5	28.8	28.5
33851	Remove aorta constriction	2120	1170	2143	0.7	1189	1.2	1.1	1.6
33845	Remove aorta constriction	2080	1150	2133	2.3	1187	2.4	2.6	3.3
33813	Repair septal defect	1905	1015	1924	1.0	1031	1.6	1.0	1.6
33840	Remove aorta constriction	1880	1055	1909	0.8	1086	1.9	1.6	2.9
33803	Repair vessel defect	1720	1010	1731	0.7	1022	1.2	0.7	1.2
33802	Repair vessel defect	1510	820	1555	2.2	861	3.8	3.0	5.0
33824	Revise major vessel	1430	745	1502	2.9	804	4.4	5.0	7.9
33822	Revise major vessel	1220	685	1302	4.0	733	4.3	6.7	7.0
33830	Revise major vessel	1220	430	1246	5.0	481	9.6	2.1	11.8
33820	Revise major vessel	940	505	1015	5.1	547	6.0	8.0	8.2
Family I -- Miscellaneous									
33350	Repair major blood vessel(s)	2655	1630	2579	2.4	1659	1.3	-2.9	1.8
33786	Repair arterial trunk	2605	1685	2836*	5.3	1903	8.0	8.9	12.9
33575	Revise coronary circulation	2595	1540	2600	2.0	1589	2.6	0.2	3.2
32820	Reconstruct injured chest	2270	1440	2377	5.5	1562	7.7	4.7	8.5
33730	Repair heart-vein defect(s)	2250	1545	2443*	5.2	1667	7.3	8.6	7.9
33788	Revision of pulmonary artery	2030	1260	2087	1.7	1285	1.5	2.8	2.0
33960	External circulation assist	1565	1095	1610	3.2	1061	9.6	2.9	-3.1

[a] Review mean total and intra work rating and standard error reported as a percent of the respective mean.

* Majority of reviewers agreed with the direction of change for review value and mean review work rating differs from pre-review value by more than one standard error.

Table 5.6

Recommended work values for previously studied by-report CPT codes

Sp	CPT	Description	Review work rating Total	Intra	Low response Rate**
or	20802	Replantation, arm, complete	2680	1745	Y
or	20804	Replantation, arm, partial	2475	1580	Y
or	20805	Replant forearm, complete	2880	1910	Y
or	20806	Replantation,forearm,partial	2710	1770	Y
or	20808	Replantation, hand, complete	2900	1935	Y
or	20812	Replantation, hand, partial	2760	1840	Y
or	20816	Replantation digit, complete	1985	1360	Y
or	20820	Replantation, digit, partial	1895	1330	Y
or	20822	Replantation digit, complete	1835	1245	Y
or	20823	Replantation, digit, partial	1775	1220	Y
or	20824	Replantation thumb, complete	2070	1460	Y
or	20826	Replantation, thumb, partial	2005	1420	Y
or	20827	Replantation thumb, complete	1880	1285	Y
or	20828	Replantation, thumb, partial	1815	1260	Y
or	20832	Replantation, leg, complete	2645	1630	Y
or	20834	Replantation, leg, partial	2065	1175	Y
or	20838	Replantation, foot, complete	2620	1639*	Y
or	20840	Replantation, foot, partial	2035	1282*	Y
or	20955	Microvascular fibula graft	2105	1235	Y
or	20960	Microvascular rib graft	2040	1195	Y
or	20962	Microvascular bone graft	2070	1275	Y
or	20969	Bone-skin graft	2010	1195	Y
or	20970	Bone-skin graft, pelvis	2070	1235	Y
or	20971	Bone-skin graft, rib	1975	1195	Y
or	20972	Bone-skin graft, metatarsal	1975	1195	Y
or	20973	Bone-skin graft, great toe	2070	1245	Y
or	24940	Revision of upper arm	1885	1255	Y
or	25915	Amputation of forearm	1365	815	Y
or	26550	Construct thumb replacement	1405	955	Y
or	26552	Construct thumb replacement	2160	1340	Y
or	26555	Positional change of finger	1080	745*	Y
or	26557	Construct finger replacement	1370	760	Y
or	26558	Added finger surgery	985	640	Y
or	26559	Added finger surgery	1010	640	Y
or	26580	Repair hand deformity	1270	835	Y
or	26585	Repair finger deformity	970	625	Y
or	26587	Reconstruct extra finger	750	445	Y
or	26590	Repair finger deformity	995	635	Y
or	28360	Reconstruct cleft foot	1098*	723*	Y
ot	30400	Reconstruction of nose	885	595	

*Pre-review value was revised.
**"Y" in this column indicates fewer than 1/2 of the reviewers provided a rating for this service.

Table 5.6 (continued)

Recommended work values for previously studied by-report CPT codes

Sp	CPT	Description	Review work rating Total	Intra	Low response Rate**
ot	30410	Reconstruction of nose	950	676*	
ot	30420	Reconstruction of nose	980	710*	
ot	30430	Revision of nose	580	360	
ot	30435	Revision of nose	770	500	
ot	30450	Revision of nose	1030	715	
ot	31582	Revision of larynx	1285	803*	
ot	31588	Revision of larynx	1125	700	
ot	31590	Reinnervate larynx	1180	680	
ot	31755	Repair of windpipe	785	310	
ts	32820	Reconstruct injured chest	2270	1440	
ts	33350	Repair major blood vessel(s)	2655	1630	
ts	33407	Revision of aortic valve	2305	1400	
ts	33408	Revision of aortic valve	1975	1000	
ts	33412	Replacement of aortic valve	3205	2300	
ts	33415	Revision, subvalvular tissue	2485	1560	
ts	33417	Repair of aortic valve	2230	1375	
ts	33470	Revision of pulmonary valve	1705	870	
ts	33472	Revision of pulmonary valve	1940	965	
ts	33476	Revision of heart chamber	2145	1260	
ts	33478	Revision of heart chamber	2345	1300	
ts	33575	Revise coronary circulation	2595	1540	
ts	33641	Repair heart septum defect	1980	1200	
ts	33645	Revision of heart veins	2260	1360	
ts	33647	Repair heart septum defects	2750	1795	
ts	33649	Repair tricuspid defect	3655	2110	
ts	33660	Repair of heart defects	3030	1915	
ts	33665	Repair of heart defects	3075	1965	
ts	33670	Repair of heart chambers	3065	2235	
ts	33681	Repair heart septum defect	2195	1315	
ts	33684	Repair heart septum defect	2980	1845	
ts	33688	Repair heart septum defect	2860	1740	
ts	33690	Reinforce pulmonary artery	1600	695	
ts	33692	Repair of heart defects	3105	2000	
ts	33694	Repair of heart defects	3320	2075	
ts	33696	Repair of heart defects	3320	2150	
ts	33702	Repair of heart defects	2915	1860	
ts	33710	Repair of heart defects	3245	2185	
ts	33720	Repair of heart defect	2850	1950	
ts	33730	Repair heart-vein defect(s)	2443*	1545	
ts	33735	Revision of heart chamber	1880	830	

*Pre-review value was revised.
**"Y" in this column indicates fewer than 1/2 of the reviewers provided a rating for this service.

Table 5.6 (continued)

Recommended work values for previously studied by-report CPT codes

Sp	CPT	Description	Review work rating Total	Intra	Low response Rate**
ts	33737	Revision of heart chamber	1965	930	
ts	33738	Revision of heart chamber	1245	480	Y
ts	33739	Revision of heart chamber	1585	685	Y
ts	33750	Major vessel shunt	1745	845	
ts	33755	Major vessel shunt	1880	830	
ts	33762	Major vessel shunt	1950	850	Y
ts	33764	Major vessel shunt & graft	1895	845	
ts	33766	Major vessel shunt	1970	975	
ts	33774	Repair great vessels defect	2815	1735	
ts	33775	Repair great vessels defect	3010	1925	
ts	33776	Repair great vessels defect	3050	1955	
ts	33777	Repair great vessels defect	2905	1925	
ts	33778	Repair great vessels defect	2705	1790	Y
ts	33779	Repair great vessels defect	3145	1980	Y
ts	33780	Repair great vessels defect	3165	2000	Y
ts	33781	Repair great vessels defect	3165	2000	Y
ts	33786	Repair arterial trunk	2836*	1685	
ts	33788	Revision of pulmonary artery	2030	1260	
ts	33802	Repair vessel defect	1510	820	
ts	33803	Repair vessel defect	1720	1010	
ts	33813	Repair septal defect	1905	1015	Y
ts	33814	Repair septal defect	2225	1270	
ts	33820	Revise major vessel	940	505	
ts	33822	Revise major vessel	1220	685	
ts	33824	Revise major vessel	1430	745	
ts	33830	Revise major vessel	1220	430	
ts	33840	Remove aorta constriction	1880	1055	
ts	33845	Remove aorta constriction	2080	1150	
ts	33851	Remove aorta constriction	2120	1170	
ts	33852	Repair septal defect	2356*	1414*	
ts	33855	Repair septal defect	2737*	1632*	Y
ts	33960	External circulation assist	1565	1095	
gs	34501	Repair valve, femoral vein	960	410	
gs	34510	Transposition of vein valve	1155	505	
gs	34520	Cross-over vein graft	1225	600	
gs	34530	Leg vein fusion	1010	445	
gs	35161	Repair defect of artery	1675	970	
gs	35162	Repair artery rupture	1780	1050	
gs	35548	Artery bypass graft	2005	1295	
gs	35549	Artery bypass graft	2155	1425	

*Pre-review value was revised.
**"Y" in this column indicates fewer than 1/2 of the reviewers provided a rating for this service.

Table 5.6 (continued)

Recommended work values for previously studied by-report CPT codes

Sp	CPT	Description	Review work rating Total	Review work rating Intra	Low response Rate**
gs	35870	Repair vessel graft defect	2021*	1198*	
gs	36835	Artery to vein shunt	655	325	
gs	36840	Insert mandril	415	150	
gs	36845	Fusion with mandril	520	325	
ns	61530	Removal of brain lesion	4135	3380	
ns	61556	Incise skull/sutures	2025	1325	
ns	61557	Incise skull/sutures	2110	1395	
ns	61558	Excision of skull/sutures	2250	1450	
ns	61559	Excision of skull/sutures	2450	1998*	
ns	61563	Excision of skull tumor	2300	1520	
ns	61564	Excision of skull tumor	2650	1800	
ns	61680	Intracranial vessel surgery	3620	2935*	
ns	61682	Intracranial vessel surgery	4190	3445	
ns	61684	Intracranial vessel surgery	3895	3000	
ns	61686	Intracranial vessel surgery	4710	3910	
ns	61692	Intracranial vessel surgery	3770	2998*	
ns	61702	Inner skull vessel surgery	4086*	3337*	
ns	62115	Reduction of skull defect	1355	810	
ns	62116	Reduction of skull defect	1540	1156*	
ns	62117	Reduction of skull defect	1968*	1369*	
ns	62120	Repair skull cavity lesion	2210	1510	
ns	63700	Repair of spinal herniation	1130	660	
ns	63702	Repair of spinal herniation	1360	840	
ns	63704	Repair of spinal herniation	1465	1012*	
ns	63706	Repair of spinal herniation	1765	1257*	

*Pre-review value was revised.

**"Y" in this column indicates fewer than 1/2 of the reviewers provided a rating for this service.

Table 5.7

Survey estimates of intra-service work and time
for by-report CPT codes: Oral & maxillofacial surgery

		Intra-service				
		Work		Time (mins)		No. of
CPT	Description	Mean	S.E*	Mean	S.E*	Responses
21120	Reconstruction of chin	330	6.9	55	5.6	24
21121	Reconstruction of chin	413	5.9	64	3.2	24
21122	Reconstruction of chin	491	5.5	88	6.0	23
21123	Reconstruction of chin	599	4.6	111	3.6	24
21125	Augmentation lower jaw bone	381	8.1	73	6.3	20
21127	Augmentation lower jaw bone	584	6.0	134	6.2	22
21137	Reduction of forehead	483	10.5	108	6.0	14
21138	Reduction of forehead	626	10.9	145	7.0	13
21139	Reduction of forehead	792	11.2	170	10.6	12
21144	Reconstruct midface, Lefort1	1195	5.3	151	4.9	24
21145	Reconstruct midface, Lefort1	1412	4.8	202	3.5	24
21146	Reconstruct midface, Lefort1	1556	4.9	227	4.1	24
21147	Reconstruct midface, Lefort1	1685	5.2	252	4.4	24
21150	Reconstruct midface, Lefort2	1534	9.0	260	6.0	19
21151	Reconstruct midface, Lefort2	1713	8.7	305	6.6	19
21154	Reconstruct midface, Lefort3	1986	10.3	367	7.8	15
21155	Reconstruct midface, Lefort3	2318	10.8	449	8.5	15
21159	Reconstruct midface, Lefort3	2424	11.9	477	7.9	12
21160	Reconstruct midface, Lefort3	2642	12.2	536	7.8	12
21172	Reconstruct orbit/forehead	1475	12.5	208	9.8	13
21175	Reconstruct orbit/forehead	2321	13.5	329	9.7	12
21179	Reconstruct entire forehead	1778	13.8	272	11.6	12
21180	Reconstruct entire forehead	1792	15.1	300	9.7	13

*Standard error reported as a percent of mean value.

Table 5.7 (continued)

Survey estimates of intra-service work and time
for by-report CPT codes: Oral & maxillofacial surgery

CPT	Description	Intra-service Work Mean	Work S.E*	Time (mins) Mean	Time (mins) S.E*	No. of Responses
21181	Contour cranial bone lesion	1049	14.7	168	11.8	16
21182	Reconstruct cranial bone	1798	10.8	343	5.7	15
21183	Reconstruct cranial bone	1995	11.3	390	4.7	15
21184	Reconstruct cranial bone	2150	10.9	479	8.4	15
21188	Reconstruction of midface	1377	9.0	242	9.6	18
21193	Reconstruct lower jaw bone	788	17.2	95	7.8	20
21194	Reconstruct lower jaw bone	1040	15.2	158	5.3	20
21195	Reconstruct lower jaw bone	830	16.1	79	9.6	21
21196	Reconstruct lower jaw bone	1010	15.4	105	8.8	21
21198	Reconstruct lower jaw bone	722	19.4	96	7.4	19
21206	Reconstruct upper jaw bone	744	21.5	108	7.5	17

*Standard error reported as a percent of mean value.

Note: All work estimates reported on the Harvard RBRVS cross-specialty scale of work.

Table 5.8

Survey estimates of pre- and post-service time
for by-report CPT codes: Oral & maxillofacial surgery

CPT	Description	Pre-service time (mins) before O.R. entry		Immediate pre-op time (mins)		Immediate post-op time (mins)		No. of Responses
		Mean	S.E*	Mean	S.E*	Mean	S.E*	
21120	Reconstruction of chin	27	18.3	23	15.6	23	17.7	13
21121	Reconstruction of chin	27	18.3	23	15.6	23	17.7	13
21122	Reconstruction of chin	27	18.2	24	15.0	25	17.4	12
21123	Reconstruction of chin	28	16.8	28	17.4	28	18.3	12
21125	Augmentation lower jaw bone	24	19.4	24	16.4	24	19.1	11
21127	Augmentation lower jaw bone	30	19.7	28	19.2	26	19.2	11
21137	Reduction of forehead	32	21.7	33	20.1	29	24.7	7
21138	Reduction of forehead	40	25.1	38	14.4	34	17.1	7
21139	Reduction of forehead	45	25.1	37	14.8	39	13.3	7
21144	Reconstruct midface, Lefort1	41	24.8	29	10.9	31	16.2	13
21145	Reconstruct midface, Lefort1	43	23.2	31	12.8	33	16.0	13
21146	Reconstruct midface, Lefort1	46	26.7	33	12.0	34	15.2	13
21147	Reconstruct midface, Lefort1	46	26.7	33	12.0	34	15.2	13
21150	Reconstruct midface, Lefort2	58	37.4	33	15.3	40	20.8	9
21151	Reconstruct midface, Lefort2	57	36.3	36	17.0	40	20.8	9
21154	Reconstruct midface, Lefort3	78	40.4	41	15.7	45	23.6	7
21155	Reconstruct midface, Lefort3	79	40.1	42	16.7	47	24.1	7
21159	Reconstruct midface, Lefort3	82	47.3	47	11.8	54	21.4	6
21160	Reconstruct midface, Lefort3	83	47.2	47	11.8	54	21.4	6
21172	Reconstruct orbit/forehead	33	43.6	46	17.3	66	74.0	6
21175	Reconstruct orbit/forehead	33	59.4	44	20.3	61	113.9	5
21179	Reconstruct entire forehead	33	59.4	44	20.3	61	113.9	5
21180	Reconstruct entire forehead	35	44.2	46	17.3	74	90.8	6

*Standard error reported as a percent of mean value.

Table 5.8 (continued)

Survey estimates of pre- and post-service time
for by-report CPT codes: Oral & maxillofacial surgery

CPT	Description	Pre-service time (mins) before O.R. entry		Immediate pre-op time (mins)		Immediate post-op time (mins)		No. of Responses
		Mean	S.E*	Mean	S.E*	Mean	S.E*	
21181	Contour cranial bone lesion	29	44.1	40	13.5	55	72.5	7
21182	Reconstruct cranial bone	38	46.8	48	20.9	71	94.6	7
21183	Reconstruct cranial bone	38	46.8	48	20.9	71	94.6	7
21184	Reconstruct cranial bone	23	86.0	47	21.1	66	82.6	7
21188	Reconstruction of midface	21	71.4	41	17.7	51	61.4	8
21193	Reconstruct lower jaw bone	48	10.3	27	6.2	33	6.2	21
21194	Reconstruct lower jaw bone	55	9.5	29	7.2	36	7.2	21
21195	Reconstruct lower jaw bone	50	10.2	27	8.3	34	8.3	21
21196	Reconstruct lower jaw bone	52	10.3	27	8.8	33	8.8	21
21198	Reconstruct lower jaw bone	47	13.2	25	9.7	30	9.7	19
21206	Reconstruct upper jaw bone	45	15.3	26	6.6	31	6.6	16

*Standard error reported as a percent of mean value.

Table 5.9

Survey estimates of later same day post- time
for by-report CPT codes: Oral & maxillofacial surgery

CPT	Description	Total later same day post time (mins)		Later same day post visits		
		Mean	S.E*	Number	Duration (mins)	No. of Responses
21120	Reconstruction of chin	9	38.4	0.6	14	12
21121	Reconstruction of chin	9	38.4	0.6	14	12
21122	Reconstruction of chin	10	37.5	0.6	16	12
21123	Reconstruction of chin	12	43.1	0.7	17	12
21125	Augmentation lower jaw bone	12	34.3	0.9	14	11
21127	Augmentation lower jaw bone	15	28.0	1.1	14	11
21137	Reduction of forehead	15	23.5	1.0	15	7
21138	Reduction of forehead	12	54.2	0.7	17	7
21139	Reduction of forehead	15	25.1	1.0	15	7
21144	Reconstruct midface, Lefort1	18	18.8	1.1	16	13
21145	Reconstruct midface, Lefort1	20	18.2	1.1	17	13
21146	Reconstruct midface, Lefort1	20	18.2	1.1	17	13
21147	Reconstruct midface, Lefort1	20	18.2	1.1	17	13
21150	Reconstruct midface, Lefort2	25	18.5	1.0	24	9
21151	Reconstruct midface, Lefort2	25	18.5	1.1	22	9
21154	Reconstruct midface, Lefort3	27	14.2	1.2	22	7
21155	Reconstruct midface, Lefort3	27	14.2	1.2	22	7
21159	Reconstruct midface, Lefort3	25	12.9	1.0	25	6
21160	Reconstruct midface, Lefort3	25	12.9	1.0	25	6
21172	Reconstruct orbit/forehead	25	20.1	1.3	19	5
21175	Reconstruct orbit/forehead	27	22.8	1.4	20	5
21179	Reconstruct entire forehead	25	20.1	1.3	19	5
21180	Reconstruct entire forehead	24	16.7	1.3	19	6

Table 5.9 (continued)

Survey estimates of later same day post- time
for by-report CPT codes: Oral & maxillofacial surgery

CPT	Description	Total later same day post time (mins)		Later same day post visits		
		Mean	S.E*	Number	Duration (mins)	No. of Responses
21181	Contour cranial bone lesion	21	26.1	1.2	17	6
21182	Reconstruct cranial bone	26	16.1	1.5	17	7
21183	Reconstruct cranial bone	27	17.5	1.5	17	7
21184	Reconstruct cranial bone	28	14.5	1.5	19	7
21188	Reconstruction of midface	20	18.0	1.2	16	7
21193	Reconstruct lower jaw bone	18**	--	1.0	17**	21
21194	Reconstruct lower jaw bone	18	--	1.0	17	21
21195	Reconstruct lower jaw bone	17	--	1.0	17	21
21196	Reconstruct lower jaw bone	17	--	1.0	17	21
21198	Reconstruct lower jaw bone	17	--	1.0	17	19
21206	Reconstruct upper jaw bone	13	--	0.9	17	16

*Standard error reported as a percent of mean value.

**Codes 21193 through 21206 were surveyed in both cycles 1 and 2 for oral & maxillofacial surgery. The number of later same day post visits was surveyed in cycle 2 while the duration of those visits was surveyed in cycle 1. Total later same day post time was computed from those mean estimates.

Table 5.10

Survey estimates of post-service hospital time
for by-report CPT codes: Oral & maxillofacial surgery

CPT	Description	Total hospital time (mins)		Hospital visits			
		Mean	S.E*	Number	Duration (mins)	No. of ICU visits	No. of Responses
21120	Reconstruction of chin	4	56.9	0.2	12	0.0	10
21121	Reconstruction of chin	4	56.8	0.2	12	0.0	11
21122	Reconstruction of chin	7	56.9	0.5	15	0.0	12
21123	Reconstruction of chin	17	41.9	1.1	16	0.0	12
21125	Augmentation lower jaw bone	11	48.2	0.6	17	0.0	11
21127	Augmentation lower jaw bone	25	29.7	1.6	16	0.0	11
21137	Reduction of forehead	20	41.7	1.5	13	0.0	7
21138	Reduction of forehead	26	32.3	1.9	14	0.0	7
21139	Reduction of forehead	38	14.2	2.5	15	0.0	7
21144	Reconstruct midface, Lefort1	36	22.9	2.4	15	0.0	12
21145	Reconstruct midface, Lefort1	40	22.9	2.5	16	0.0	13
21146	Reconstruct midface, Lefort1	49	22.2	3.1	16	0.0	13
21147	Reconstruct midface, Lefort1	52	25.3	3.3	16	1.5	13
21150	Reconstruct midface, Lefort2	76	23.4	4.2	17	1.0	9
21151	Reconstruct midface, Lefort2	78	25.7	4.3	17	1.0	9
21154	Reconstruct midface, Lefort3	85	23.0	5.0	17	1.5	7
21155	Reconstruct midface, Lefort3	90	17.5	5.0	17	2.0	7
21159	Reconstruct midface, Lefort3	87	14.9	5.1	17	2.0	6
21160	Reconstruct midface, Lefort3	94	15.8	5.0	19	2.5	6
21172	Reconstruct orbit/forehead	68	28.1	3.6	19	1.5	6
21175	Reconstruct orbit/forehead	85	33.4	4.5	19	2.0	5
21179	Reconstruct entire forehead	82	30.9	4.3	19	2.0	5
21180	Reconstruct entire forehead	81	26.7	4.3	19	2.0	6

*Standard error reported as a percent of mean value.

Table 5.10 (continued)

Survey estimates of post-service hospital time
for by-report CPT codes: Oral & maxillofacial surgery

CPT	Description	Total hospital time (mins) Mean	S.E*	Hospital visits Number	Duration (mins)	No. of ICU visits	No. of Responses
21181	Contour cranial bone lesion	55	24.0	3.2	17	0.0	7
21182	Reconstruct cranial bone	87	36.0	4.4	20	2.0	7
21183	Reconstruct cranial bone	88	36.6	4.4	20	2.0	7
21184	Reconstruct cranial bone	93	36.1	4.7	20	2.0	7
21188	Reconstruction of midface	64	25.9	3.8	17	0.0	8
21193	Reconstruct lower jaw bone	43**	--	2.4	17**	0.0	21
21194	Reconstruct lower jaw bone	54	--	3.0	17	0.0	21
21195	Reconstruct lower jaw bone	45	--	2.5	17	0.0	21
21196	Reconstruct lower jaw bone	47	--	2.6	17	0.0	21
21198	Reconstruct lower jaw bone	34	--	1.9	17	0.0	19
21206	Reconstruct upper jaw bone	29	--	1.7	17	0.0	16

*Standard error reported as a percent of mean value.

**Codes 21193 through 21206 were surveyed in both cycles 1 and 2 for oral & maxillofacial surgery. The number of hospital visits was surveyed in cycle 2 while the duration of those visits was surveyed in cycle 1. Total hospital time was computed from those mean estimates.

Table 5.11

Survey estimates of post-service office time
for by-report CPT codes: Oral & maxillofacial surgery

CPT	Description	Total office time (mins)		Office visits		
		Mean	S.E*	Number	Duration (mins)	No. of Responses
21120	Reconstruction of chin	59	16.8	4.5	13	13
21121	Reconstruction of chin	54	15.4	4.5	12	13
21122	Reconstruction of chin	62	17.8	4.8	13	12
21123	Reconstruction of chin	67	19.7	5.2	13	12
21125	Augmentation lower jaw bone	55	17.3	4.6	12	11
21127	Augmentation lower jaw bone	70	19.8	5.0	14	11
21137	Reduction of forehead	50	20.1	3.8	13	7
21138	Reduction of forehead	70	24.3	5.0	14	7
21139	Reduction of forehead	89	13.3	5.9	15	7
21144	Reconstruct midface, Lefort1	112	12.5	7.5	15	13
21145	Reconstruct midface, Lefort1	120	13.5	7.5	16	13
21146	Reconstruct midface, Lefort1	137	15.7	8.1	17	13
21147	Reconstruct midface, Lefort1	140	15.7	8.2	17	13
21150	Reconstruct midface, Lefort2	158	12.3	9.3	17	9
21151	Reconstruct midface, Lefort2	146	8.8	8.6	17	9
21154	Reconstruct midface, Lefort3	147	8.3	9.2	16	7
21155	Reconstruct midface, Lefort3	156	7.9	9.8	16	7
21159	Reconstruct midface, Lefort3	163	7.6	9.6	17	6
21160	Reconstruct midface, Lefort3	163	7.6	9.6	17	6
21172	Reconstruct orbit/forehead	107	13.6	6.7	16	6
21175	Reconstruct orbit/forehead	121	10.7	7.1	17	5
21179	Reconstruct entire forehead	111	16.2	6.9	16	5
21180	Reconstruct entire forehead	120	8.7	7.1	17	6

*Standard error reported as a percent of mean value.

Table 5.11 (continued)

Survey estimates of post-service office time
for by-report CPT codes: Oral & maxillofacial surgery

CPT	Description	Total office time (mins)		Office visits		
		Mean	S.E*	Number	Duration (mins)	No. of Responses
21181	Contour cranial bone lesion	88	15.3	5.9	15	7
21182	Reconstruct cranial bone	117	20.7	6.9	17	7
21183	Reconstruct cranial bone	124	18.5	6.9	18	7
21184	Reconstruct cranial bone	134	20.0	7.1	19	7
21188	Reconstruction of midface	113	14.5	7.1	16	8
21193	Reconstruct lower jaw bone	104**	--	6.5	16**	21
21194	Reconstruct lower jaw bone	107	--	6.7	16	21
21195	Reconstruct lower jaw bone	107	--	6.7	16	21
21196	Reconstruct lower jaw bone	106	--	6.6	16	21
21198	Reconstruct lower jaw bone	87	--	5.8	15	19
21206	Reconstruct upper jaw bone	86	--	5.7	15	16

*Standard error reported as a percent of mean value.

**Codes 21193 through 21206 were surveyed in both cycles 1 and 2 for oral & maxillofacial surgery. The number of office visits was surveyed in cycle 2 while the duration of those visits was surveyed in cycle 1. Total office time was computed from those mean estimates.

Table 5.12

Intra-, pre-/post- and total-service work
for newly studied by-report CPT codes:
Oral & maxillofacial surgery

		Work		
Cpt-4	Description	Intra	Pre/post	Total
21120	Reconstruction of chin	330	345	675
21121	Reconstruction of chin	413	333	746
21122	Reconstruction of chin	491	374	865
21123	Reconstruction of chin	599	444	1043
21125	Augmentation lower jaw bone	381	367	748
21127	Augmentation lower jaw bone	584	486	1070
21137	Reduction of forehead	483	442	925
21138	Reduction of forehead	626	541	1167
21139	Reduction of forehead	792	662	1454
21144	Reconstruct midface, Lefort1	1195	675	1870
21145	Reconstruct midface, Lefort1	1412	727	2139
21146	Reconstruct midface, Lefort1	1556	812	2368
21147	Reconstruct midface, Lefort1	1685	912	2597
21150	Reconstruct midface, Lefort2	1534	1102	2636
21151	Reconstruct midface, Lefort2	1713	1082	2795
21154	Reconstruct midface, Lefort3	1986	1199	3185
21155	Reconstruct midface, Lefort3	2318	1262	3580
21159	Reconstruct midface, Lefort3	2424	1300	3724
21160	Reconstruct midface, Lefort3	2642	1343	3985
21172	Reconstruct orbit/forehead	1475	1032	2507
21175	Reconstruct orbit/forehead	2321	1121	3442
21179	Reconstruct entire forehead	1778	1078	2856
21180	Reconstruct entire forehead	1792	1152	2944
21181	Contour cranial bone lesion	1049	754	1803
21182	Reconstruct cranial bone	1798	1174	2972
21183	Reconstruct cranial bone	1995	1198	3193
21184	Reconstruct cranial bone	2150	1189	3339
21188	Reconstruction of midface	1377	815	2192
21193	Reconstruct lower jaw bone	788	698	1486
21194	Reconstruct lower jaw bone	1040	771	1811
21195	Reconstruct lower jaw bone	830	717	1547
21196	Reconstruct lower jaw bone	1010	723	1733
21198	Reconstruct lower jaw bone	722	609	1331
21206	Reconstruct upper jaw bone	744	577	1321

Table 5.13

Comparison of total work for oral & maxillofacial surgery:
Survey results versus 1993 Medicare Fee Schedule (MFS)

		Total work				
CPT-4	Description	Current study value	1993 MFS value*	Requested value for 1993**	Ratio current to 1993 MFS	Ratio current to requested
21120	Reconstruction of chin	675	471	844	1.43	0.80
21121	Reconstruction of chin	746	740	984	1.01	0.76
21122	Reconstruction of chin	865	815	1055	1.06	0.82
21123	Reconstruction of chin	1043	1066	1252	0.98	0.83
21125	Augmentation lower jaw bone	748	617	1125	1.21	0.66
21127	Augmentation lower jaw bone	1070	1036	1459	1.03	0.73
21144	Reconstruct midface, Lefort1	1870	1680	1829	1.11	1.02
21145	Reconstruct midface, Lefort1	2139	1878	2083	1.14	1.03
21146	Reconstruct midface, Lefort1	2368	1944	2149	1.22	1.10
21147	Reconstruct midface, Lefort1	2597	2016	2252	1.29	1.15
21193	Reconstruct lower jaw bone	1486	1612	1829	0.92	0.81
21194	Reconstruct lower jaw bone	1811	1868	2083	0.97	0.87
21195	Reconstruct lower jaw bone	1547	1616	1829	0.96	0.85
21196	Reconstruct lower jaw bone	1733	1781	1915	0.97	0.90
21198	Reconstruct lower jaw bone	1331	1327	1640	1.00	0.81
21206	Reconstruct upper jaw bone	1321	1327	1640	1.00	0.81

*Total work value included in the 1993 MFS. Service was initially treated as by-report in the 1992 MFS.

**Value requested through comments to HCFA on the MFS.

Chapter 6

Task IV: Investigate the Work and Time Required to Perform Multiple Surgery

6.1 Introduction

Although most physicians' surgical services are provided individually, a significant number are performed as multiple procedures. In general, multiple procedures are defined as occurring when a surgeon performs more than one procedure on the same patient on the same day. Bilateral surgery (the same surgery performed on both sides of the body) is one type of multiple procedure. A second type is concurrent surgery, or the performance of two different (though frequently related) invasive procedures at the same time. Although payment policies exist to address such situations, the actual work and time of services performed in this manner have not been quantified in a systematic way.

The current Medicare policy for payment of multiple procedures is a combination of historic practices and results of earlier phases of the RBRVS study. For some services, there are different CPT codes that denote that a multiple procedure has been performed (for example, 17001 - removal of a second or third benign lesion, and 17002 - removal of each additional lesion over three). The work of these codes was measured in the RBRVS study and is included in the Medicare Fee Schedule (MFS). When other multiple procedures are performed, Medicare, in general, will pay the physician 100 percent of the global fee for the highest priced (primary) procedure, 50 percent for the second, and 25 percent each for the third, fourth and fifth.[1] Under these rules, bilateral surgery is paid at 150 percent of the global fee

of the unilateral procedure. Special rules apply for the performance of multiple endoscopic procedures.

The current treatment of multiple procedures is, in most cases, not based upon measurement of the incremental work of additional services, but rather on historical precedent. The payment policy implies that economies of scope exist in performing additional services. That these economies exist is not being challenged; however, their true measure may differ from that included in the current payment rules.

The objective of Task IV was to study the work of multiple procedures. In particular, we were interested in the relationship between the work of services when performed individually and as multiple procedures. In our investigation, we addressed three important issues:

1. Economies of scope - What are the differences in work and time between performing a service alone or in addition to another service? What are the economies of scope? Are these economies present during the intra-service phase or only during pre- and post-service activities?;
2. Systematic variations - Is there a systematic relationship between the work of multiple procedures and the clinical characteristics of the services involved?; and
3. Uniform payment policy - Can the findings about multiple procedures studied be generalized to all

services performed in this way? Can a uniform payment policy be developed that accurately reflects the additional work, and how will this compare to current payment rules?

To address these issues, we first consulted with our TCG and RBRVS assessment panelists about the nature of multiple procedures. The panelists identified the circumstances under which these services are performed and also provided us with a list of the most commonly performed multiple procedures in their specialty.

Second, we selected approximately 150 multiple procedures from ten different specialties for study. These included the most frequently performed multiples for each specialty and services that span its clinical breadth.

Third, we measured the work of multiple procedures using magnitude estimation and surveys of the RBRVS Assessment Panels. We also obtained estimates of the time required to perform these services.

Fourth, we analyzed the data and compared the marginal work and time of each multiple procedure with that of performing the services individually. We also evaluated the results for systematic patterns across services and specialties.

Finally, we summarize our results and produce recommendations to HCFA about payment policy for multiple procedures.

This chapter describes the methods, data and results of the study of multiple procedures. We first provide a summary of our previous research on multiple procedures, followed by a description of the selection of procedures for the current study. We then discuss the methods employed for Task IV and the results.

6.2 Previous Research on Multiple Procedures

In the first three phases of the RBRVS study, we explored different approaches to measure the work of multiple procedures. In both our national surveys of physicians and in the RBRVS small group process, we studied the work of a number of these procedures. We included in our investigation primarily those procedures in CPT that described multiple services in the specialties of dermatology, neurosurgery, orthopedics, and plastic surgery.

To study these services, we used a three step process. First, we asked surgeons to rate the work and time of each service when performed individually. Second, we asked them to rate the work of the services when performed in combination, as a multiple procedure. Finally, we subtracted the first rating from the second to compute the marginal work of the additional service. For example, CPT code 17000 describes the removal of a single benign lesion. We surveyed physicians about the total work of this service and obtained an estimate of 52. To measure the work of CPT code 17001, which describes the removal of a second benign lesion, we asked the physicians to rate the work of

removing two lesions and obtained an estimate of 57. The difference between these two estimates yielded a work value of 5 for CPT code 17001.

Using this approach, we found that the work of incremental services could be measured and that the results appeared to have face validity. Table 6.1 provides examples of these earlier results.* (A more detailed presentation of the vignettes used to describe these services is included in appendix Tables E.1 and E.2.) Table 6.1 describes the primary and multiple service vignettes used for each code and includes the results for total service work. The rightmost column of the table describe the marginal work of the additional service as a percentage of the work of the primary service. As shown in the table, the added work of the second service represents 10 to 40 percent of the primary service. For the bilateral procedures, the work of the second procedure is approximately one-third of that of the procedure when performed unilaterally. We built on this phase III approach to study multiple procedures in the current study.

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*With the exception of the bilateral procedures studied in plastic surgery, all of the services in Table 6.1 are described in CPT as being a part of a multiple service (these are sometimes called "secondary codes"). Relative values have been assigned to these services in the MFS and they are therefore not paid under the current payment policy for multiple procedures. We present the results for these services only to illustrate our previous findings. They are not included in the analysis of multiple procedures described below. However, we did include the estimates for the bilateral plastic surgery procedures in our final analysis.

6.3 Selection of Multiple Procedures for Study

We selected procedures for study in each specialty based on two criteria: (1) they represented the most commonly performed multiple procedures in the specialty and (2) the procedures chosen span the specialty's clinical breadth. We chose high volume procedures to ensure that those combinations of greatest financial import are studied directly. The selection of services covering a wide clinical range enabled us to assess systematic variations in work across different multiple procedures.

In our proposal, we identified two approaches for identifying procedures for study. First, we proposed to tabulate how frequently multiple procedures are performed using Medicare claims data. Second, we proposed to review these data with the TCGs and assessment panelists to determine if there were any significant omissions and to ensure that the services we selected covered the relevant clinical range of the specialty.

We encountered difficulties in using the Medicare claims data to identify commonly performed multiple procedures. We identified the Medicare Part B Beneficiary file as the most useful claims data for this task. However, our preliminary analysis found that the beneficiary file was both large (36 reels of tape for 1989) and expensive to process, an expense not budgeted for in our contract. Efforts to use HCFA computers and resources to process the file were not productive. With the exception of a claims summary for bilateral procedures obtained

from the Medicare Part B provider file, we were unable to use Medicare data for this task.

As a result, we enlisted the RBRVS assessment panelists to identify multiple procedures for study. To do this we asked each panelist to identify five to seven commonly performed multiples in his/her specialty. Each respondent provided a brief description of the multiple services and the applicable CPT codes, when possible. We surveyed ten specialties: general surgery, neurosurgery, obstetrics and gynecology, ophthalmology, oral and maxillofacial surgery, orthopedic surgery, otolaryngology, podiatry, cardiothoracic surgery, and urology. The survey instruments are included in Appendix F (Cycle 1 for all specialties).

We tabulated the survey responses and identified those services listed by more than one panelist as potential study services. We also identified services covering the range of clinical work in each specialty. Using these data, and with the assistance of the TCGs and surgical consultants to our study, we identified 15 to 25 potential procedures for each of the ten specialties.

Finally, we compared our list of services with available claims data. These data included the claims frequency of bilateral procedures by CPT code from Medicare Part B data. We also tabulated commonly performed multiple procedures using data from two private insurers. In general, we found the multiple

services we selected to be among those most frequently reported in these data.

The multiple procedures we studied are presented in Table 6.2. The table is sorted by specialty and includes a description of each multiple procedure and the CPT codes of the services comprising it. We selected a total of 146 multiple procedures for study, comprised of 12 to 20 procedures per specialty. These services include 122 multiple procedures involving two services and 24 multiple procedures involving three or more services.

6.4 Methods

We employed a three-step process to estimate the work of multiple procedures. First, we obtained work values for the individual services comprising each multiple. These included estimates of the work for the primary, secondary, and other procedures involved. We considered the primary procedure in each multiple as the service requiring the greatest amount of work, the secondary the second largest amount, and so on. Most of the estimates for these individual services were obtained from surveys of physicians earlier in the RBRVS study.

Second, we asked the assessment panelists to rate the work of the multiple procedure. Third, we subtracted the work of the primary procedure from that obtained for the multiple and computed the marginal work of the additional service.

This method can be summarized by equations 6.1 and 6.2:

$$(6.1) \qquad Work_a = Work_m - Work_p$$

where:

$Work_a$ is the marginal work of the second or added service;

$Work_m$ is the work of the multiple procedure

$Work_p$ is the work of the primary procedure when performed alone.

The marginal work of the second or added service as a ratio of the work of that service when performed alone ($Rwork_s$) is:

(6.2) $Rwork_s = (Work_a/Work_s)$

where:

$Work_s$ is the work of the second or added service when performed alone. We estimated time for the multiple procedures in a similar way.

The multiple procedure policy in the MFS is based on the assumption that $Rwork_s$ is 0.50 for the second procedure in a multiple and 0.25 for the third and subsequent added procedures. We designed our methods to measure $Work_a$ and $Rwork_s$ for each multiple procedure.

6.4.1 Assessing the Time of Multiple Services

We surveyed the panelists in each specialty about the time required to perform multiple procedures. In addition to intra-time, we asked surgeons to rate separately each of the five components of pre- and post surgical time: pre-service time before entry into the operating room; immediate pre- and post-operative time; other same-day post-operative time; hospital post-operative time; and office post-operative time. For other same-day, hospital, and office post-operative time, we asked for estimates of the number of visits provided. In the hospital

post-operative period, we also asked for the number of visits in the intensive care unit (ICU).

To estimate surgical times, we provided the panelists with mean time values for one or more of the procedures comprising each multiple and asked them to consider these values when rating the time of the multiple service. These values had been obtained previously from surveys of physicians, including the assessment panels. We provided these times on the survey for two reasons: first, since the panelists had provided time ratings earlier for the individual services comprising the multiples, it was unnecessary to ask them to re-rate these items. Second, we were interested in the additional work and time of the second, third, and subsequent procedures comprising each multiple ($Work_a$ or $Time_a$). Listing the time values for the primary service provided a baseline from which the panelists could rate the time of the multiple procedure.

6.4.2 Assessing the Work of Multiple Services

We used magnitude estimation with multiple reference services to measure intra-service work. To do this, we asked the assessment panelists to rate the intra-service work of the multiple procedures using two sets of information as a reference. First we asked them to consider the work values on their reference list when rating the multiples. (A discussion of this methodology and the reference list is provided in Chapter 2.) In addition to the reference list, we also provided the panelists

with the mean intra-service work values for one or more of the procedures comprising each multiple. As with the times, these estimates were obtained previously from surveys of physicians, (including the assessment panels). We asked the panelists to consider all these values when rating intra-service work.

We used pre- and post-service time to compute pre- and post-service work for the multiple services. We first computed the marginal pre- and post-service times attributable to the additional service by subtracting the mean time estimates for the primary procedure from those of the multiple. We then used the methods developed previously and employed for all specialties in phase III to compute the marginal pre- and post-service work.[2] We summed this work and that of the primary service to compute the pre- and post-service work of the multiple procedure.

Finally, we added intra- and pre- and post-service work to obtain total work. The estimates of the marginal work of each additional service in a multiple ($Work_s$) were computed using equation 6.1. The ratio of this work to that of the additional service when performed alone ($Rwork_s$) was computed as given in equation 6.2.

The survey instruments we used for this task are included in Appendix F. The reference lists used by the panelists in rating intra-service work are included in Appendix B, Table B.1.

6.5 Results

6.5.1 Estimates of the Work and Time of Multiple Services

Table 6.3 presents the estimates of intra-service work and time for selected multiple procedures. The intra-service estimates for all services studied are included in Appendix E, Table E.5. The estimates of pre- and post-service time, by component, are also included in Appendix E, in Tables E.3 and E.4. The standard errors in the tables suggest relatively good agreement among the panelists about the intra-service work and time involved in performing the multiple procedures.

Table 6.4 displays the pre- and post- and total service work for the selected services. The results for all multiple procedures are included in Appendix Table E.6. As shown in the table, the total work of some multiple procedures is substantial, exceeding 4,000 for services in neurosurgery, otolaryngology and cardiothoracic surgery. As we have found previously, pre- and post-service work comprises a significant portion of the total work of surgical procedures.

6.5.2 Economies of Scope in Performing Multiple Procedures

We examined the economies of scope of providing multiple procedures by comparing the marginal work of the additional service with the work of the service when performed alone. We computed the ratio of these two amounts using equation 6.2. A ratio of 1.0 indicates that the work of the additional service as part of a multiple procedure is equivalent to the work of that

service when performed alone. A ratio less than 1.0 suggests economies of scope are involved. The lower the ratio, the greater economies are implied.

We evaluated four variables for economies of scope: intra-service time, intra-service work, pre- and post-service work, and total-service work and computed the ratio described by equation 6.2 for each of these variables for each service. The ratios for the first three variables are presented for selected services in Tables 6.5, 6.6 and 6.7 and for all services in Appendix E, Tables E.7, E.8 and E.9. The ratios for total work for all services are presented in Table 6.8.

6.5.2.1 Economies of Scope: Two Service Multiple Procedures

Since the economies of scope may differ depending on whether the additional service is the second or subsequent procedure in a multiple service, we analyzed the results for multiple procedures involving two services and for those comprising three or more services separately. As discussed above, the MFS applies different rules to secondary than to subsequent services in a multiple procedure.

Table 6.9 summarizes the four ratios for each variable across all multiple procedures involving two services. The table shows the mean, median, minimum and maximum ratios and the standard deviation for each variable. There are 127 services included in the summary. The average economies of scope,

computed from the mean ratios for the four variables in Table 6.9, are presented in Figure 6.1.

The results for intra-service time and intra-service work suggest, on average, modest economies of scope. The mean ratios for the two variables for all services are 0.78 and 0.76 indicating that the intra-service work and time of the additional service are about 75 percent of that for the service when performed alone.

We found significant economies of scope, however, for pre- and post-service work. The mean ratio for the pre- and post-service work of the additional service is, on average, 20 percent of that for the service performed alone. This suggests economies of about 80 percent for the pre- and post-service phase. The results for total work show that the work of the additional service is, on average, 48 percent of that for the service when performed alone. This result is consistent with the current multiple procedure policy employed by the MFS, which provides 50 percent of the full payment for the second procedure.

6.5.2.2 Systematic Variations in Economies of Scope: Two Service Multiple Procedures

The standard deviation and the range of the ratio for total work in Table 6.9 suggest that there is variation in the results for the different procedures in our sample. We explored this variation by examining the relationship between the total work ratio and the clinical characteristics of the procedures

involved. We identified three categorizations for grouping services:

- o bilateral versus other multiple procedures;
- o type of incision(s) involved; and
- o clinical groupings describing the anatomy and type of surgery involved.

For type of incision, we grouped the services into multiple procedures performed through 1) the same incision; 2) different incisions; and 3) either non-incisional or a mix of non-incisional and incisional procedures. We employed the typology of surgical procedures developed during phase III to assign clinical groupings. We used the eighteen distinct categories described in Table 6.10 to group all services.

Table 6.10 summarizes the ratio of added total work by type of multiple service. In addition to the mean, median and standard deviation of the ratios, we also performed statistical tests of the difference in the mean ratio within each grouping. For the bilateral versus non-bilateral comparison, we used a t-test. For the remaining groupings, we employed an F-test.

We found differences in the ratios for bilateral and other multiple procedures. The mean ratio for bilateral procedures is approximately 0.40, while that for non-bilateral multiples is about 0.50. A t-test showed the difference between these two means to be significantly different from zero. Figure 6.4 compares the results for bilaterals and non-bilaterals with those for all services and the MFS policy for second procedures.

We also found minor differences by incisional type. The mean ratios for multiple procedures performed through the same and through different incisions were similar. A t-test (not shown) found the difference between the means to be statistically insignificant. However, we did find the ratio for multiple procedures involving no incision or a mix of incisional and non-incisional services to be higher than those for the same and different incision groups. An F-test of the difference between the three means was found to be significant. Despite this result, given the heterogeneity of the procedures in the "other incision" category and the similarity of the means for the same and different incision procedure groups, we conclude incision type has minimal ability to explain practical variations in the total work ratio.

The mean results by clinical group show some differences across groups. The groups with the highest ratios were multiple procedures involving spinal, open chest, eye, head and neck, and endoscopic procedures. The groups with the lowest ratios included skin and simple tooth and jaw procedures. The number of observations used in computing some of these means, listed in the column labelled "N" in Table 6.10, suggest that the results should be interpreted with caution. An F-test found the differences in the means by clinical group to be significant.

In addition to examining the ratios by type of multiple procedure, we investigated systematic differences related to the work requirements of the second procedure. We used two measures

to describe this work: the total work of the second procedure when performed alone ($Work_s$) and the percentage of pre- and post-service work of $Work_s$. We analyzed the first variable to assess whether there were any differences in the ratio between services of lesser or greater work. We selected the second variable for analysis based on our finding that economies of scope are approximately 80 percent for the added pre- and post-service work of the second procedure, while the economies for intra-service work are only 25 percent (see table 6.6). As result, secondary procedures with a greater proportion of pre- and post- relative to intra-service work are likely to have higher total work ratios.

Figures 6.2 and 6.3 present these comparisons. Figure 6.2 suggests a small, negative relationship between the total work ratio and the magnitude of $Work_s$. Correlating these two variables, we obtained a correlation coefficient of -0.14; not statistically different from zero. Figure 6.3, as expected, shows a negative relationship between the $RWork_s$ and the percentage of pre- and post-service work of $Work_s$. The simple correlation for these two variables was -0.51 and was significantly different from zero. Procedures with larger proportions of pre- and post-service work benefit to a greater extent from the economies of scope found in the pre- and post-service work of the added service.

Finally, we used two multiple regressions to assess the effects of each of the service characteristics described above on

the total work ratio. The dependent variable in both models was the total work ratio ($RWork_s$). As explanatory variables in model I, we included: $Work_s$; pre- and post-service work as a percentage of $Work_s$; bilateral status; incisional type; and clinical grouping. For model II, we included only bilateral status; incisional type; and clinical grouping as explanatory variables. Model I includes all the characteristics we examined, while model II includes only those discrete characteristics which can be used to group services for payment policy. The variables for bilateral status, incisional type, and clinical grouping were entered as dummy variables in the models. For the clinical dummy variables, we included a separate dummy variable for each category with the exception of the musculoskeletal procedures. As a result, the remaining clinical group variables are measured relative to these procedures. A more detailed description of the variables in the regression models is provided in the key to Table 6.11.

The estimates for the two regression models are presented in Table 6.11. The results include the estimated coefficients, R-squared, root of mean squared errors, and the number of observations included in the regression. As shown, with the exception of the clinical dummies, most of the variables in the model are significant predictors of the total work ratio. The signs and magnitude of the coefficients for the bilateral and incisional dummy variables are consistent with the results discussed above. The coefficient for the percentage pre- and

post-service work of $Work_s$ in model I suggests a strong negative relationship with the total work ratio. Finally, as described above, the clinical dummy variables were measured relative to the musculoskeletal procedures. An F-test of the significance of these variables as a group indicated that they contribute to the predictive power of the model. However, the coefficients for most of these variables do not suggest significant differences between the individual grouping and musculoskeletal procedures.

Finally, for a small number of multiple procedures, we used the same secondary service, but different primary services. These services provided an opportunity to assess the sensitivity of the results for the added work of the secondary service ($Work_s$) and the total work ratio ($RWork_s$) to the primary service involved. Table 6.12 shows mixed results. For some secondary services, $Work_s$ and $RWork_s$ are very similar across different primary services, while for others these amounts vary. We computed the mean result for each secondary service and the difference from this mean for each multiple with that secondary service. The average difference from the mean result across all services was about 11 percent.*

*For example, the mean $Work_s$ for secondary code 44950 (appendectomy) is (0.36+0.26)/2 = 0.31. The average difference for the two appendectomy services from this mean is 0.05, or 16 percent of 0.31.

6.5.2.3 Economies of Scope: Three or More Service Multiple Procedures

We measured the work and time of 24 multiple procedures involving three or more services. These multiple procedures are described in Table 6.2 and designated in Table 6.8.

To compute the marginal work of the third or subsequent service in a multiple procedure ($Work_a$), we required estimates of the work of the primary, secondary, and subsequent services when performed as separate multiples. For example, service "L", surveyed in ophthalmology, describes a multiple procedure involving the performance of a corneal transplant <u>with</u> a secondary IOL implant <u>with</u> an anterior vitrectomy. In this example, the vitrectomy, being the individual service of least total work, is the third procedure. We needed an estimate of the work of performing a corneal transplant <u>with</u> a secondary IOL implant as a separate service to compute the added work of the vitrectomy. We did this using service "I" in the ophthalmology survey. However, because of the complexity and clinical nature of the services involved, we were only able to use this type of comparison for 14 of the 24 multiple procedures involving three or more services.

Table 6.13 summarizes the results for the added work and time of the third procedure to the work and time of the service when performed alone. The table summarizes the 14 services where the marginal work can be computed. (The services included in this analysis are identified in Table 6.14.) As shown, the

ratios of intra-service time and work are similar and somewhat lower than those in Table 6.9 for the second procedure. We again found significant economies of scope for pre- and post-service work, averaging 85 percent across the 14 services. The mean ratio for total work is 0.45 and is similar to the 0.48 estimate found for secondary procedures. Finally, Figure 6.5 suggests there is no relationship between the total work ratio and the total work of the third procedure when performed alone. Figure 6.4 and Table 6.12 suggest that the typical total work ratio for the third service is markedly greater than the 0.25 value assumed in the MFS multiple surgery policy. Figure 6.6 compares the mean study result with the MFS policy.

We employed a second approach to compare the work of multiple procedures involving three or more services with the MFS policy. To do this, we compared the total service work estimates we obtained with the amounts computed using the MFS rule. To compute the MFS amounts, we took the weighted sum of the MFS work values for each procedure involved in the multiple. We weighted the primary procedure 100 percent, the secondary procedure 50 percent and all subsequent procedures 25 percent.

Table 6.13 presents this comparison. As shown in the table, for most procedures, our work values exceed those allowed under the MFS. The rightmost column of the table includes the ratio of our estimate to the MFS value. The ratios range from 0.78 to

1.85 and the mean ratio is 1.13.* A t-test found the mean ratio to be significantly different from 1.0.

6.6 Recommendations for Payment Policy

We can use our findings to assess different payment policies for multiple surgery. There are a number of principles which should be considered in establishing such a policy. First, the payment rules should be equitable and reflect the empirical evidence on the work requirements of multiple procedures. Second, the rules should be administratively feasible for HCFA and the Medicare carriers. Third, the payment policy should provide the appropriate incentives to providers. For example, if payment amounts are set too low, providers may have an incentive to unbundle the multiple service and provide the individual procedures separately at different times. A single payment rule is unlikely to satisfy fully each of these principles. However, each of these and other guidelines must be weighed in developing an appropriate policy.

Since the majority of our results are for two service multiples, we focus our policy assessments on these services. We offer a discussion of payment for three or more service multiples below. Based on our findings, we evaluated five different policies, of increasing complexity:

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*Assuming the MFS payment rule for the first two services is about right, for the procedures involving three services, this result translates into a payment factor of 0.48 for the third service. (1.00 + 0.50 + 0.25 = 1.75, 1.75*1.13 =1.98, 1.98 - (1.00 + 0.50) = 0.48).

1. The current MFS payment rule: 50 percent of full payment for the second service;

2. Different payment rules for the second service for bilateral and other multiple procedures: 40 percent for bilaterals, 50 percent for other multiples;

3. Payment depending on the mix of intra- and pre- and post-service work for the second service: 75 percent payment for the intra-service work, 20 percent for pre-and post-service work;

4. Payment for the second service using a formula derived from the regression results for Model II in Table 6.11; and

5. Payment for the second service using a formula derived from the regression results for Model I in Table 6.11.

All the policies assume 100 percent payment for the first procedure.

To estimate relative equity, we computed the difference between payment under a particular policy and the actual work values we measured. Figure 6.7 summarizes the mean of these differences, as a percentage of the actual work.* For example, using the current MFS rule (50 percent) results in payments differing from our findings for individual services on average, by 29 percent. Applying a different rule for bilateral procedures (40 percent) produces a 24 percent difference. The

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*These differences were computed using the following formula: percent difference = abs[((Work$_r$ - Work$_a$)/ Work$_a$)*100], where Work$_r$ is the work amount for the second service under the proposed policy, Work$_a$ is our estimate of the added work of the second service and "abs" denotes the absolute value.

most complex payment rule (regression Model I) reduces the average payment differential to 14 percent. The findings for the regression formulas (Models I and II) indicate that even with the more complicated approaches, some payment inequities would continue to exist.

The administrative complexity of the five policies differ. The first two approaches are straightforward to implement; both involve the application of a constant percentage across all procedures in a group. For the second approach, the 40 percent factor could be applied to all services billed with the '-50' payment modifier, while the 50 percent factor could be used for all other multiples. The latter three approaches would require a separate percentage be assigned to each CPT code, a method which may not be extremely difficult to administer once the percentages are established. However, computing these amounts and updating them over time would require further study and data.

Given these findings, we recommend two options be considered for the second service in a multiple. First, our findings provide strong evidence that the work requirements for bilateral and other multiple procedures differ. Using a 40 percent payment factor for bilateral procedures and continuing to use the 50 percent rule for other multiples ("40/50 rule") would produce payments more consistent with the work involved. Second, our mean result (48 percent) suggests that the current MFS 50 percent rule closely approximates, on average, the work involved. Continued use of this policy would overpay surgeons for bilateral

procedures. However, this excess amount may provide an increased disincentive to unbundle these procedures. Finally, the latter three rules we proposed would provide some increased equity relative to the 40/50 and 50 percent rules. However, the administrative complexity of these approaches may outweigh their benefits.

For multiple procedures involving three or more services, we found the current MFS rule (25 percent for the third and subsequent services) may be inadequate. We found the additional work of the third and subsequent services to be, on average, about 45 percent of that when they are performed individually. For only a few procedures did this amount fall below 25 percent. We recommend the payment policy for these procedures be reconsidered.

6.7 Summary

We accomplished our objectives for Task IV. We selected a total of 146 multiple procedures for study, including 122 multiples involving two services and 24 involving three or more procedures. Using methods developed in phase III and the RBRVS Assessment panels for ten specialties, we estimated the work and time involved for each these services.

We found economies of scope in performing multiple procedures. For two procedure multiples, the marginal intra-service work and time of the second procedure is about 75 percent of that required to perform the second procedure alone. For pre-

and post-service work, we found even greater economies; the added pre- and post-service work was only 20 percent of that of the second procedure performed alone. These results for intra- and pre- and post-service work combined to produce economies of scope for total work of approximately 50 percent. The finding for total work is consistent with the current MFS payment policy for the second service in a multiple.

We found some differences in economies of scope across multiple procedures. For bilateral procedures, the total work of the added service was, on average, 40 percent of the total work of the service performed individually, while for other multiples, this amount was 50 percent. Since greater economies were shown for pre- and post- than intra-service work, we also found greater economies in total work for those services where pre- and post- comprised a larger portion of the total. Finally, we found some differences across clinical service groupings.

Economies of scope also exist for multiple procedures involving three or more services. We found that the added total-service work for the third procedure in these multiples was about 45 percent of that of the third procedure performed alone. This amount is greater than the 25 percent value assumed for the current MFS policy.

Based on these findings, we suggested two payment policy options be considered for the second service in a multiple procedure. The first option is to continue the current rule of 100 percent of full payment for the primary procedure and 50

percent payment for the second procedure. The second option would decrease the payment factor to 40 percent for the second service for bilateral procedures. Finally, we recommend that the current MFS policy for the third and subsequent procedures in a multiple be reconsidered.

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2. Hsiao WC, Braun P, Dunn DL, et al: "A National Study of Resource-Based Relative Value Scales for Physician Services: Phase III Study." Final Report to the Health Care Financing Administration. HCFA Contract No. 18-C-98795/1-03. Cambridge, MA: Harvard School of Public Health, 1992.

Figure 6.1
Multiple procedures involving two services--
Economies of scope for time and work

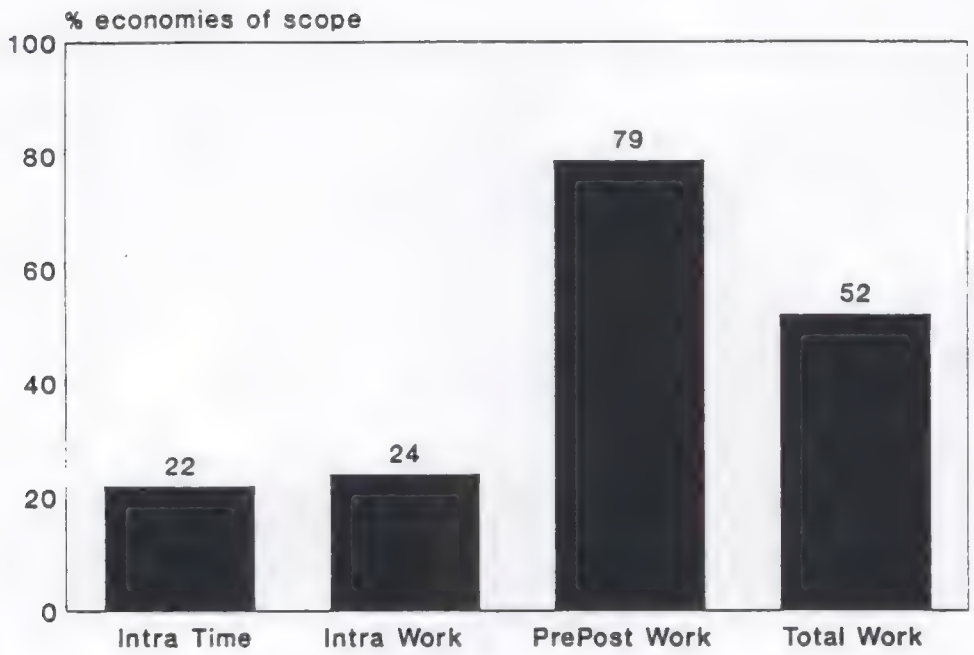

Figure 6.2

Multiple procedures, two services --
Plot of the ratio of the added total work of the second procedure to
the total work of the second procedure performed alone
versus the total work of the second procedure performed alone

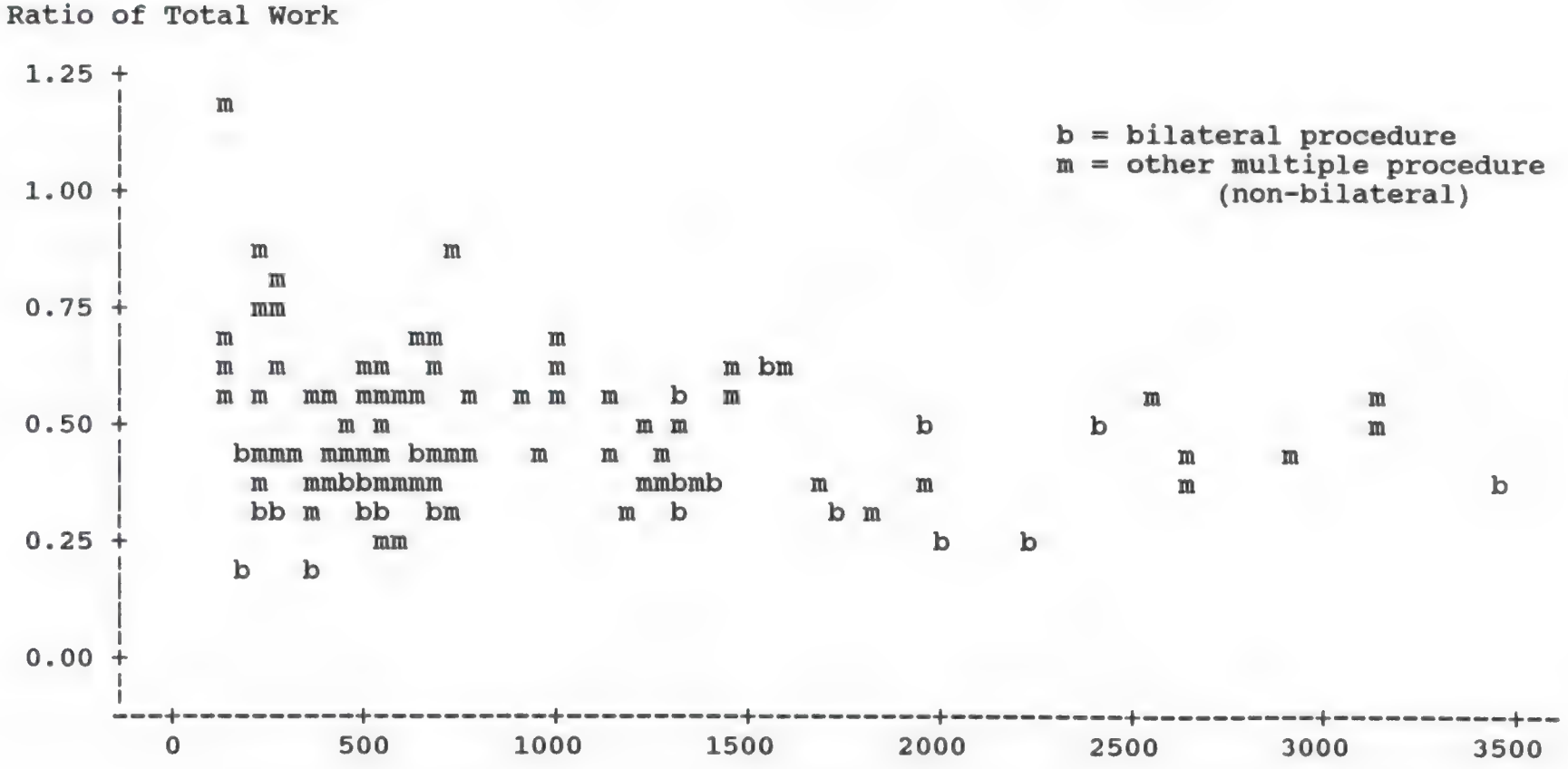

Figure 6.3

Multiple procedures, two services:
plot of the ratio of the added total work of the second procedure to
the total work of the second procedure when performed alone
versus percentage prepost of the total work of the second procedure performed alone

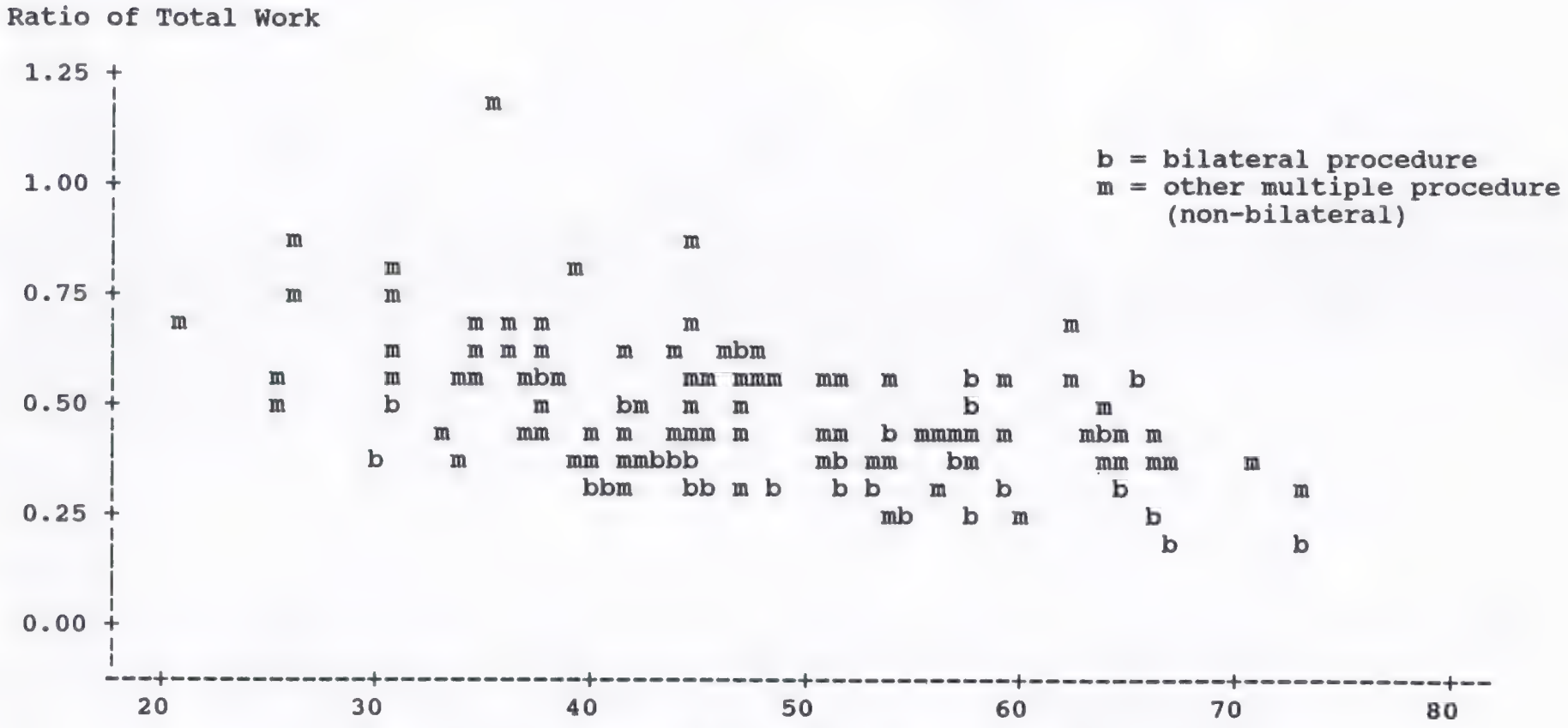

Figure 6.4
Comparison of MFS policy for second procedure
in multiple surgery with study results

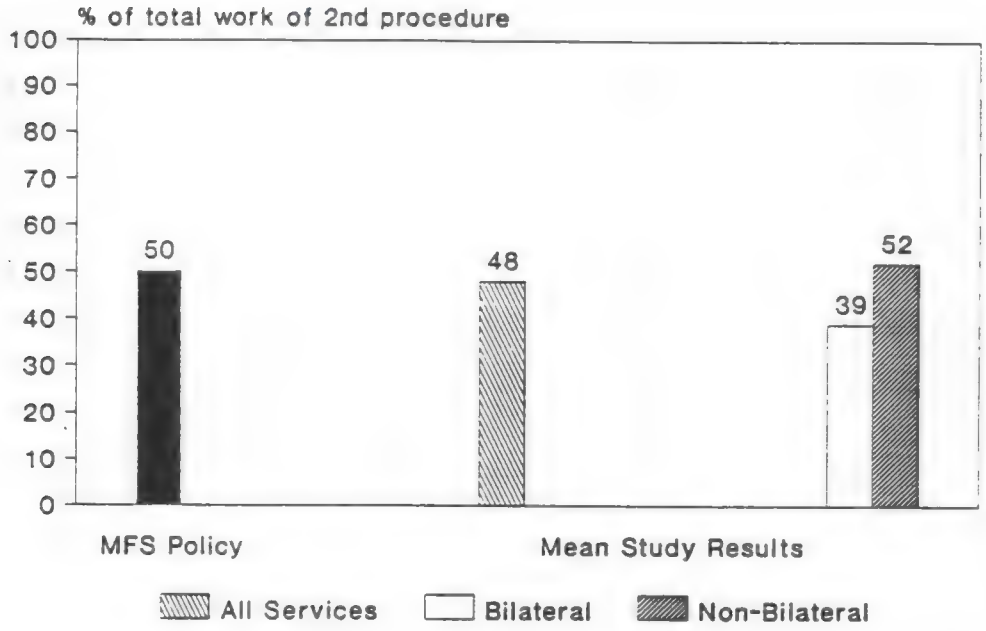

Figure 6.5

Multiple procedures, three services:
plot of the ratio of the added total work of the third procedure to
the total work of the third procedure when performed alone
versus the total work of the third procedure performed alone

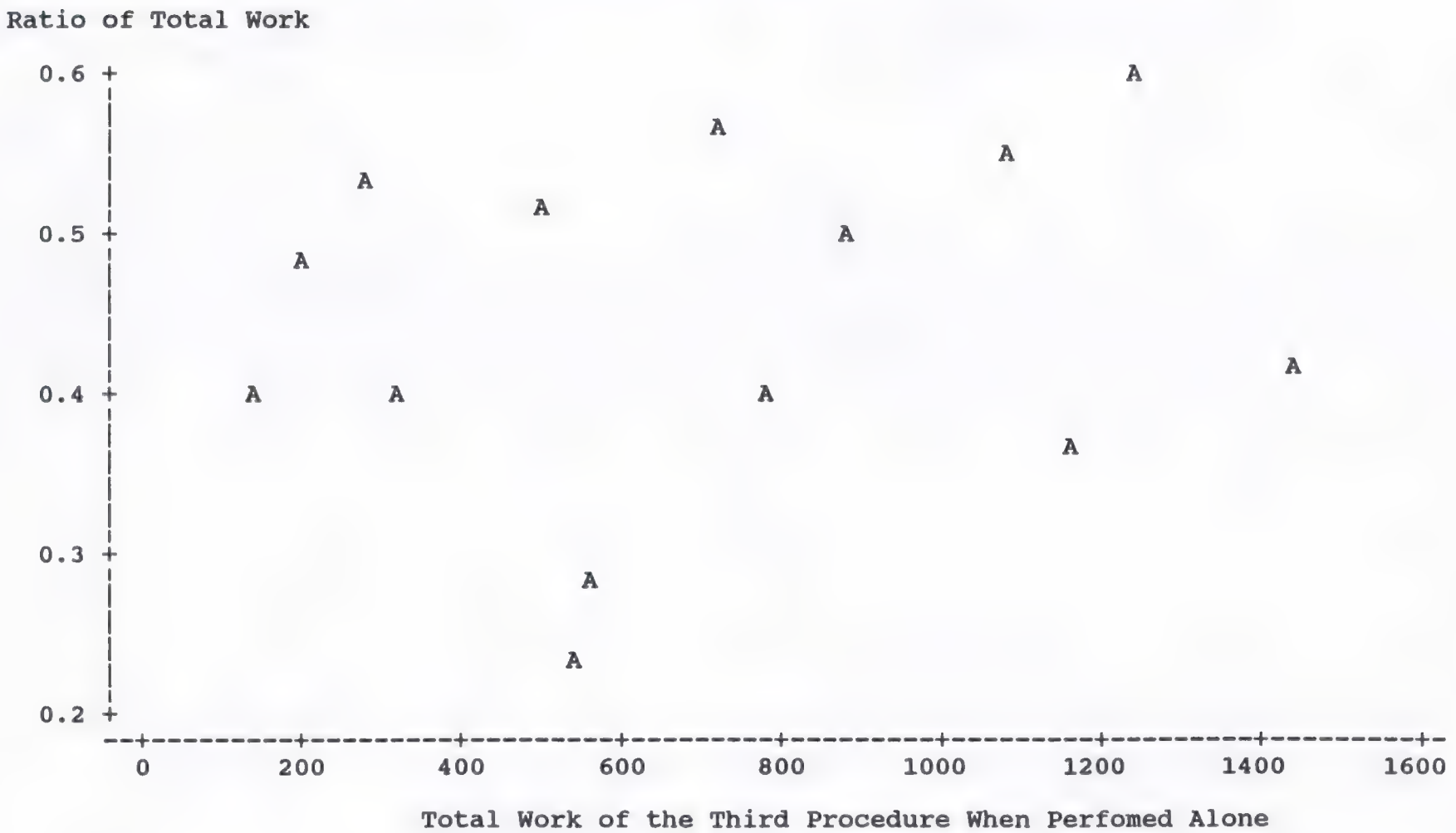

Figure 6.6
Comparison of MFS policy for third procedure
in multiple surgery with study results

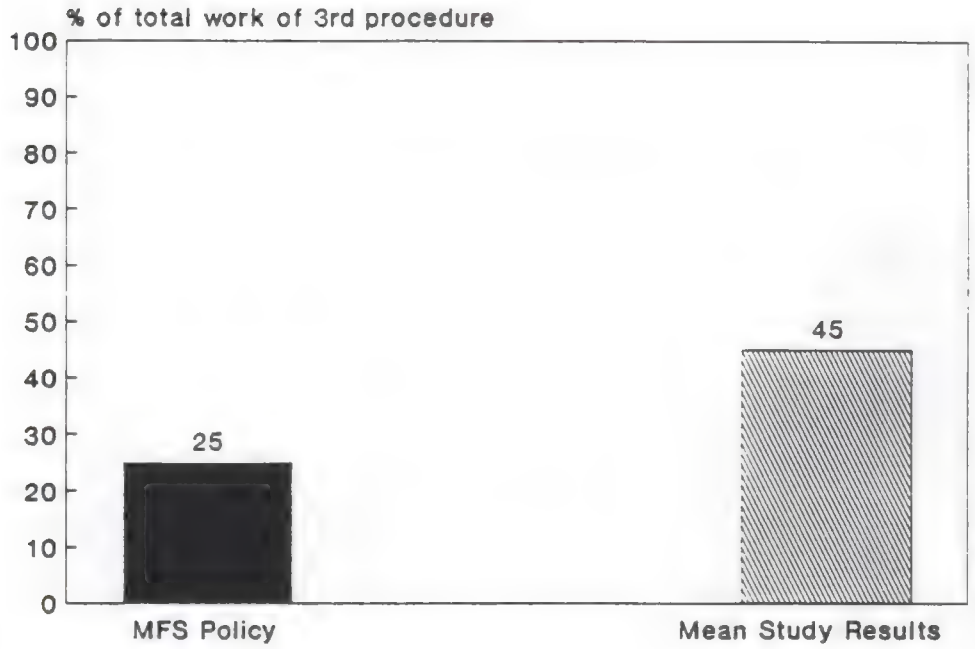

Figure 6.7
Relative payment equity:
difference between payment policy options and study results--
two service multiples

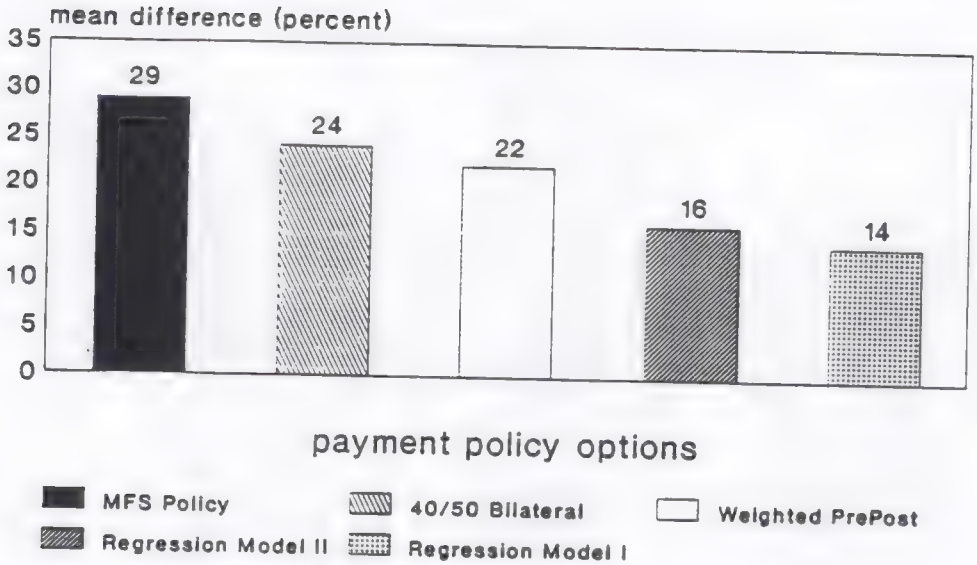

Table 6.1

Estimation of total-service work for multiple procedures and added procedures: selected services studied in phase III

Spec		CPT	Description*	Total service work	Work of added service as % of total
dm	A	11200	Excision skin tags; 15 lesions.	93	16 %
	B		Excision skin tags; 25 lesions.	108	
	C	11201	Excision skin tags; each addtnl 10 lesions.	15	
dm	A	17000	Cryodestruction one benign lesion, face	52	10
	B		Cryodestruction of two benign lesions, face	57	
	C	17001	Cryodestruction of 2nd and 3rd benign lesions, face, each	5	
dm	A	17100	Cryodestruction of one benign lesion, not face	42	19
	B		Cryodestruction of two benign lesions, not face	50	
	C	17101	Cryodestruction of benign lesions, 2nd lesion	8	
dm	A	17200	Electrosurg destruct fibrocut tags, 8 lesions	54	31
	B		Electrosurg destruct fibrocut tags, 18 lesions	71	
	C	17102	Electrosurg destruct fibrocut tags, each addtl 10	17	
or	A	222xx	Osteotomy of spine for deformity, single segment	1985	31
	B		Osteotomy of spine for deformity, two segments	2604	
	C	22230	Osteotomy of spine for deformity, each addtl segment	619	
ns	A	2255x	Arthrodesis, anterior, single interspace	1618	16
	B		Arthrodesis, anterior, single interspace	1392	
	C	22585	Arthrodesis, anterior, each addtl interspace	226	

*Service description: A = primary vignette and code, B = secondary vignette, C = vignette and code describing the added service.

Table 6.1 (continued)

Estimation of total-service work for multiple procedures and added procedures: selected services studied in phase III

Spec	CPT	Description*	Total service work	Work of added service as % of total
or A	226xx	Arthrodesis, posterior, single interspace	1976	20
B		Arthrodesis, posterior, single interspace	2376	
C	22650	Arthrodesis, posterior, each addtl interspace	400	
or A	228xx	Arthrodesis, interphalg joint, w/ graft, sngl jnt	718	14
B		Arthrodesis, interphalg joint, w/ graft, two jnts	815	
C	22863	Arthrodesis, interphalg joint, w/ graft addtl joint	97	
or A	2769x	Transfer or transplant, single tendon	816	11
B		Transfer or transplant, two tendons	902	
C	27692	Transfer or transplant, each additional tendon.	87	
ns A	630xx	Hemilaminectomy, single interspace	1262	20
B		Hemilaminectomy, two interspaces	1511	
C	63035	Hemilaminectomy, each addtl interspace	249	
ns A	6305x	Decompress spinal cord, single segment	1831	32
B		Decompress spinal cord, two segments	2414	
C	63057	Decompress spinal cord, each addtl segment	583	
ns A	63075	Neck/Spine disk surgery, single interspace	1362	36
B		Neck/Spine disk surgery, two interspaces	1846	
C	63076	Neck/Spine disk surgery, each addtl interspace	484	

*Service description: A = primary vignette and code, B = secondary vignette, C = vignette and code describing the added service.

Table 6.1 (continued)

Estimation of total-service work for multiple procedures and added procedures: selected services studied in phase III

Spec		CPT	Description*	Total service work	Work of added service as % of total
ns	A	63081	Removal of vertebral body, single segment	2200	16
	B		Removal of vertebral body, two segments	2545	
	C	63082	Removal of vertebral body, each addtl segment	345	
ns	A	64622	Destruct paravertebral joint nerve, single level.	335	21
	B		Destruct paravertebral joint nerve, two levels.	404	
	C	64623	Destruct paravertebral joint nerve, each addtl level.	69	
ns	A	64776	Excision of neuroma, digital nerve same digit	458	15
	B		Excision of neuroma, digital nerve two digits	525	
	C	64778	Excision of neuroma, digital nerve eac addtl digit	67	
ns	A	64782	Excision of neuroma, not digtl nrv, same digit	559	34
	B		Excision of neuroma, not digtl nrv, two digits	751	
	C	64787	Excision of neuroma, not digtl nrv, each addtl digit	192	
ns	A	64831	Suture of digital nerve, one nerve	750	29
	B		Suture of digital nerve, two nerves	970	
	C	64832	Suture of digital nerve, each addtl nerve	220	
ns	A	6489x	Nerve graft, one nerve	1477	26
	B		Nerve graft, two nerves	1875	
	C	64901	Nerve graft, each additional nerve	379	

*Service description: A = primary vignette and code, B = secondary vignette, C = vignette and code describing the added service.

Table 6.1 (continued)

Estimation of total-service work for multiple procedures and added procedures: selected services studied in phase III

Spec		CPT	Description*	Total service work	Work of added service as % of total
ca	A	92982	Percut translum coronary angioplasty, one vessel	769	26
	B		Percut translum coronary angioplasty, two vessels	971	
	C	92984	Percut translum coron angioplasty, each addtl vessel	202	
ps	A	15820	Blepharoplasty, lower eyelid	498	31
	B		Blepharoplasty, both lower eyelids	654	
	C	15820-50	Blepharoplasty, each addtl eyelid	156	
ps	A	15821	Blepharoplasty, lower eyelid	556	32
	B		Blepharoplasty, both lower eyelids	732	
	C	15821-50	Blepharoplasty, each addtl eyelid	176	
ps	A	15822	Blepharoplasty, upper eyelid	446	37
	B		Blepharoplasty, both upper eyelids	613	
	C	15822-50	Blepharoplasty, each addtl eyelid	167	
ps	A	19328	Removal of intact mammary implant, single breast	513	35
	B		Removal of intact mammary implant, two breasts	695	
	C	19328-50	Removal of intact mammary implant, second breast	182	
ps	A	19330	Removal of mammary implant, single breast	695	31
	B		Removal of mammary implant, two breasts	912	
	C	19330-50	Removal of mammary implant, second breast	217	

*Service description: A = primary vignette and code, B = secondary vignette, C = vignette and code describing the added service.

Table 6.2

Vignettes for multiple procedures survey: General surgery

Svc	CPT code(s)	Vignette
b		Bilateral inguinal hernia repair for child under 5 years.
	49500	Unilateral inguinal hernia repair for child under 5 years.
d		Inguinal hernia repair for child under 5 years with circumcision (using clamp or other device).
	49500	Unilateral inguinal hernia repair for child under 5 years.
	54152	Circumcision for child under 5 years (using clamp or other device), except newborn.
g		Excision of breast mass with axillary dissection (lymphadenectomy), complete.
	19120	Excision of breast mass.
	19162	Axillary dissection (lymphadenectomy), complete.
i		Excision of breast mass (frozen section), followed by modified radical mastectomy for cancer.
	19120	Excision of breast mass.
	19200	Modified radical mastectomy.
o		Partial colectomy with anastomosis and extensive lysis of intestinal adhesions from prior surgery.
	44140	Partial colectomy with anastomosis.
	44005	Extensive lysis of intestinal adhesions from prior surgery.
p		Partial colectomy with anastomosis and wedge biopsy of the liver.
	44140	Partial colectomy with anastomosis.
	47100	Wedge biopsy of the liver.
q		Partial colectomy with anastomosis with resection of liver (partial lobectomy).
	44140	Partial colectomy with anastomosis.
	47120	Resection of liver (partial lobectomy).

Table 6.2 (continued)

Vignettes for multiple procedures survey: General surgery

Svc	CPT code(s)	Vignette
r		Partial colectomy with anastomosis with appendectomy.
	44140	Partial colectomy with anastomosis.
	44950	Appendectomy.
t		Appendectomy with excision of Meckel's diverticulum.
	44950	Appendectomy.
	44800	Excision of Meckel's diverticulum.
w		Cholecystectomy with cholangiography and repair of ventral hernia.
	47605	Cholecystectomy with cholangiography.
	49560	Repair of ventral hernia.
z		Nissen fundoplication with temporary gastrostomy.
	43324	Nissen fundoplication.
	43830	Temporary gastrostomy.
ac		Hemigastrectomy with vagotomy and total splenectomy.
	43635	Hemigastrectomy with vagotomy.
	38100	Total splenectomy.
ae		Exploratory laparotomy for multiple trauma patient with total splenectomy.
	49000	Exploratory laparotomy.
	38100	Total splenectomy.
af		Exploratory laparotomy for multiple trauma patient with total splenectomy and partial colectomy with anastomosis.
	49000	Exploratory laparotomy.
	38100	Total splenectomy.
	44140	Partial colectomy with anastomosis.

Table 6.2 (continued)

Vignettes for multiple procedures survey: Neurosurgery

Svc	CPT code(s)	Vignette
c		Anterior cervical diskectomy for decompression of spinal cord and nerve roots, including osteophytectomy, and arthrodesis with bone allograft from bone bank, single interspace.
	63075	Anterior cervical diskectomy for decompression of spinal cord and nerve roots, including osteophytectomy.
	22554	Arthrodesis with bone allograft from bone bank, single interspace.
e		Arthrodesis, anterior approach, cervical spine, single interspace, bone allograft with application of cranial halo, including removal.
	22554	Arthrodesis with bone allograft from bone bank, single interspace.
	20661	Application of cranial halo, including removal.
h		Lumbar laminectomy, facetectomy and foraminotomy, unilateral or bilateral, for decompression of spinal cord, cauda equina, and/or nerve root(s), single vertebral segment, with arthrodesis, lateral transverse process technique, with allograft or local bone graft and/or internal wire fixation.
	63047	Lumbar laminectomy, facetectomy and foraminotomy, unilateral or bilateral, for decompression of spinal cord, cauda equina, and/or nerve root(s), single vertebral segment.
	22625	Arthrodesis, lateral transverse process technique, with allograft or local bone graft and/or internal wire fixation.

Table 6.2 (continued)

Vignettes for multiple procedures survey: Neurosurgery

Svc	CPT code(s)	Vignette
i		Lumbar laminectomy, facetectomy and foraminotomy, unilateral or bilateral, for decompression of spinal cord, cauda equina, and/or nerve root(s), single vertebral segment, with arthrodesis, lateral transverse process technique, with local bone graft and/or internal wire fixation with posterior instrumentation with segmental fixation, (e.g. dual rods with multiple hooks and sublaminal wires)
	63047	Lumbar laminectomy, facetectomy and foraminotomy, unilateral or bilateral, for decompression of spinal cord, cauda equina, and/or nerve root(s), single vertebral segment.
	22625	Arthrodesis, lateral transverse process technique, with allograft or local bone graft and/or internal wire fixation.
	22842	Posterior instrumentation with segmental fixation (e.g. dual rods with multiple hooks and sublaminal wires).
l		Posterior fossa craniectomy for excision of neoplasm, fourth ventricle, with ventriculocisternostomy (creation of permanent internal shunt).
	61518	Posterior fossa craniectomy for excision of neoplasm, fourth ventricle.
	62180	Ventriculocisternostomy (creation of permanent internal shunt).
n		Craniotomy for excision of bilateral or multiple supratentorial meningiomas.
	61512	Craniotomy for excision of supratentorial meningiomas.
p		Craniotomy for intracranial clipping of bilateral or multiple internal carotid aneurysms.
	61700	Craniotomy for intracranial clipping of internal carotid aneurysm.

Table 6.2 (continued)

Vignettes for multiple procedures survey: Neurosurgery

Svc	CPT code(s)	Vignette
r		Craniotomy for intracranial clipping of internal carotid aneurysm, with anastomosis, arterial, extracranial-intracranial (ECIC).
	61700	Craniotomy for intracranial clipping of internal carotid aneurysm.
	61711	Anastomosis, arterial, extracranial-intracranial (ECIC).
t		Craniotomy for intracranial clipping of internal carotid aneurysm, with anastomosis, arterial, extracranial-intracranial (ECIC), with subtemporal decompression, removal bone flap for cerebral acute swelling.
	61700	Craniotomy for intracranial clipping of internal carotid aneurysm.
	61711	Anastomosis, arterial, extracranial-intracranial (ECIC).
	61340	Subtemporal decompression, removal bone flap for cerebral acute swelling.
u		Posterior fossa or infratentorial craniectomy for excision of brain tumor, with anastomosis, arterial, extracranial-intracranial (ECIC).
	61518	Posterior fossa craniectomy for excision of neoplasm, fourth ventricle.
	61700	Anastomosis, arterial, extracranial-intracranial (ECIC).
x		Craniectomy with excision of tumor or other bone lesion of skull with cranioplasty for skull defect larger than 5 cm diameter.
	61500	Craniectomy with excision of tumor or other bone lesion of skull.
	62141	Cranioplasty for skull defect larger than 5 cm diameter.
aa		Decompression of carpal tunnel with ulnar nerve decompression at wrist (ipsilateral).
	64721	Decompression of carpal tunnel.
	64719	Ulnar nerve decompression at wrist.

Table 6.2 (continued)

Vignettes for multiple procedures survey: Neurosurgery

Svc	CPT code(s)	Vignette
ad		Repair of myelomeningocele, larger than 5 cm in diameter, with creation of ventriculo-peritoneal shunt.
	63706	Repair of myelomeningocele, larger than 5 cm in diameter.
	62223	Creation of ventriculo-peritoneal shunt.
ag		Myelogram followed by unilateral lumbar laminectomy with excision of intervertebral disc, single level, without fusion.
	62284	Myelogram
	63030	Unilateral lumbar laminectomy with excision of intervertebral disc, single level, without fusion.
ah		Repair 6" deep scalp laceration, do myelogram with CT scan, and apply cranial tongs for skeletal traction proceed with operative reduction of neck fracture, decompress spinal cord to remove bone fragments, fuse C_7-T_1 with bone graft harvested through separate incision and instrumentation and wiring of graft.
	12035	Repair 6" deep scalp laceration
	62284	Myelogram with CT scan
	20660	Apply cranial tongs for skeletal traction Proceed with operative reduction of neck fracture.
	63001	Decompress spinal cord to remove bone fragments.
	22554	Fuse C_7-T_1
	22820	Bone graft harvested through separate incision.
	22840	Instrumentation and wiring of graft

Table 6.2 (continued)

Vignettes for multiple procedures survey:
Obstetrics and gynecology

Svc	CPT code(s)	Vignette
d		Diagnostic dilation and curettage with diagnostic laparoscopy.
	58120	Diagnostic dilation and curettage.
	56300	Diagnostic laparoscopy.
e		Diagnostic dilation and curettage with diagnostic hysteroscopy.
	58120	Diagnostic dilation and curettage.
	56350	Diagnostic hysteroscopy.
h		Total abdominal hysterectomy with anterior colporrhaphy.
	58150	Total abdominal hysterectomy.
	57240	Anterior colporrhaphy, repair of cystocele.
k		Total abdominal hysterectomy with repair of enterocele, abdominal approach (modified Moschowitz procedure).
	58150	Total abdominal hysterectomy.
	57270	Repair of enterocele, abdominal approach (modified Moschowitz procedure).
l		Total abdominal hysterectomy with combined anteroposterior colporrhaphy.
	58150	Total abdominal hysterectomy.
	57260	Combined anteroposterior colporrhaphy.
n		Vaginal hysterectomy with combined anteroposterior colporrhaphy.
	58260	Vaginal hysterectomy.
	57260	Combined anteroposterior colporrhaphy.
p		Combined anteroposterior colporrhaphy with an abdominal colpopexy.
	57260	Combined anteroposterior colporrhaphy.
	57280	Abdominal colpopexy.

Table 6.2 (continued)

Vignettes for multiple procedures survey:
Obstetrics and gynecology

Svc	CPT code(s)	Vignette
s		Surgical laparoscopy with fulguration or excision by Co2 laser vaporization with lysis of adhesions.
	56303	Surgical laparoscopy with fulguration or excision by Co2 laser vaporization.
	56304	Surgical laparoscopy with lysis of adhesions.
u		Diagnostic laparoscopy with fimbrioplasty.
	56300	Diagnostic laparoscopy.
	58760	Fimbrioplasty.
x		Myomectomy, single/multiple abdominal approach with lysis of adhesions.
	58140	Myomectomy, single/multiple abdominal approach.
	58740	Lysis of adhesions (salpingolysis, ovariolysis).
aa		Sacrospinous ligament fixation for prolapse of vagina (Nichol's procedure) with colpoperineorrhaphy.
	57282	Sacrospinous ligament fixation for prolapse of vagina (Nichol's procedure).
	57210	Colpoperineorrhaphy, suture of injury of vagina and/or perineum.
ab		Anterior colporrhaphy with sacrospinous ligament fixation for prolapse of vagina (Nichol's procedure) with colpoperineorrhaphy.
	57240	Anterior colporrhaphy, repair of cystocele.
	57282	Sacrospinous ligament fixation for prolapse of vagina (Nichol's procedure)
	57210	Colpoperineorrhaphy.

Table 6.2 (continued)

Vignettes for multiple procedures survey: Ophthalmology

Svc	CPT code(s)	Vignette
c		Corneal transplant, with cataract removal by extracapsular surgery and intraocular lens implantation.
	65730	Corneal transplant, penetrating (except in aphakia).
	66984	Cataract removal by extracapsular surgery and intraocular lens implantation.
e		Corneal transplant, with trabeculectomy.
	65730	Corneal transplant, penetrating (except in aphakia).
	66170	Trabeculectomy.
i		Corneal transplant, with secondary intraocular lens implantation.
	65755	Corneal transplant, penetrating (in pseudophakia).
	66985	Secondary intraocular lens implantation.
j		Corneal transplant, with anterior vitrectomy (subtotal removal).
	65755	Corneal transplant, penetrating (in pseudophakia).
	67010	Anterior vitrectomy (subtotal removal).
k		Anterior vitrectomy (subtotal removal) with secondary intraocular lens implantation.
	67010	Anterior vitrectomy (subtotal removal).
	66985	Secondary intraocular lens implantation.
l		Corneal transplant, with anterior vitrectomy (subtotal removal) with secondary intraocular lens implantation.
	65755	Corneal transplant,
	67010	Anterior vitrectomy (subtotal removal).
	66985	Secondary intraocular lens implantation.
n		Cataract removal by extracapsular surgery and intraocular lens implantation with trabeculectomy.
	66984	Cataract removal by extracapsular surgery and intraocular lens implantation.
	66170	Trabeculectomy.

Table 6.2 (continued)

Vignettes for multiple procedures survey: Ophthalmology

Svc	CPT code(s)	Vignette
o		Cataract removal by extracapsular surgery and intraocular lens implantation <u>with</u> vitrectomy, mechanical, pars plana approach.
	66984	Cataract removal by extracapsular surgery and intraocular lens implantation.
	67036	Vitrectomy, mechanical, pars plana approach.
q		Strabismus surgery, one horizontal muscle <u>with</u> cataract removal by extracapsular surgery and intraocular lens implantation.
	67311	Strabismus surgery, one horizontal muscle.
	66984	Cataract removal by extracapsular surgery and intraocular lens implantation.
u		Repair of corneal laceration, perforating, not involving uveal tissue <u>with</u> repair retinal reattachment by scleral buckle.
	65280	Repair of corneal laceration, perforating, not involving uveal tissue.
	67107	Repair retinal reattachment by scleral buckle.
v		Repair of corneal laceration, perforating, not involving uveal tissue <u>with</u> repair retinal reattachment by scleral buckle <u>and</u> cataract extraction.
	65280	Repair of corneal laceration, perforating, not involving uveal tissue.
	67107	Repair retinal reattachment by scleral buckle.
	66840	Cataract extraction.
y		Combined first stage glaucoma drain implant (aqueous shunt to extraocular reservoir) (Molteno, Schocket, Denver/Krupin) <u>with</u> trabeculectomy.
	66180	Combined first stage glaucoma drain implant (aqueous shunt to extraocular reservoir) (Molteno, Schocket, Denver/Krupin).
	66170	Trabeculectomy.

Table 6.2 (continued)

Vignettes for multiple procedures survey: Ophthalmology

Svc	CPT code(s)	Vignette
z		Combined first stage glaucoma drain implant (aqueous shunt to extraocular reservoir) (Molteno, Schocket, Denver/Krupin) with trabeculectomy and scleral reinforcement graft to reduce risk of tube extrusion or migration.
	66180	Combined first stage glaucoma drain implant (aqueous shunt to extraocular reservoir) (Molteno, Schocket, Denver/Krupin).
	66170	Trabeculectomy.
	67255	Scleral reinforcement graft to reduce risk of tube extrusion or migration.
ac		Blepharoplasty, right lower and upper eyelids.
	15820	Blepharoplasty, right lower eyelid.
	15822	Blepharoplasty, right upper eyelid.
ad		Bilateral blepharoplasty, upper eyelids.
	15822	Blepharoplasty, right upper eyelid.
af		Iridotomy/iridectomy by laser surgery with repair retinal reattachment by scleral buckle.
	66761	Iridotomy/iridectomy by laser surgery.
	67107	Repair retinal reattachment by scleral buckle.
ai		Suture of recent wound, eyelid, full thickness with plastic repair of canaliculi.
	67935	Suture of recent wound, eyelid, full thickness.
	68700	Plastic repair of canaliculi.

Table 6.2 (continued)

Vignettes for multiple procedures survey:
Oral and maxillofacial surgery

Svc	CPT code(s)	Vignette
c		Open treatment of complicated mandibular fracture by multiple surgical approaches and open treatment of palatal or maxillary fractures (LeFort I type); including internal fixation, interdental fixation and/or wiring of dentures or splints.
	21470	Open treatment of complicated closed or open mandibular fracture by multiple surgical approaches including internal fixation, interdental fixation, and/or wiring of dentures or splints.
	21422	Open treatment of palatal or maxillary fractures (LeFort I type).
e		Bilateral TMJ arthroplasty, with or without autograft (includes obtaining graft).
	21240	Unilateral TMJ arthroplasty, with or without autograft (includes obtaining graft).
g		Unilateral TMJ arthroplasty, with or without autograft (includes obtaining graft), and TMJ meniscectomy.
	21240	Unilateral TMJ arthroplasty, with or without autograft (includes obtaining graft).
	21060	TMJ meniscectomy.
j		Lefort I osteotomy, reconstruction midface, three or more pieces, requiring bone grafts (includes obtaining bone grafts), and genioplasty, sliding osteotomy, single piece.
	21147	Lefort I osteotomy, reconstruction midface, three or more pieces, requiring bone grafts (includes obtaining bone grafts).
	21121	Genioplasty; sliding osteotomy, single piece.

Table 6.2 (continued)

Vignettes for multiple procedures survey:
Oral and maxillofacial surgery

Svc	CPT code(s)	Vignette
m		Open treatment of depressed malar fracture, including zygomatic arch and malar tripod and open treatment of orbital floor blowout fracture, periorbital approach, with alloplastic or other implant.
	21360	Open treatment of depressed malar fracture, including zygomatic arch and malar tripod.
	21390	Open treatment of orbital floor blowout fracture, periorbital approach, with alloplastic or other implant.
p		Reconstruction of mandibular condyle with bone and cartilage autografts, and reconstruction of zygomatic arch and glenoid fossa with bone and cartilage (includes obtaining grafts).
	21247	Reconstruction of mandibular condyle with bone and cartilage autografts (includes obtaining grafts).
	21255	Reconstruction of zygomatic arch and glenoid fossa with bone and cartilage (includes obtaining grafts).
r		Removal of two impacted wisdom teeth (full bony), includes local anesthesia.
	D7240	Removal of single impacted wisdom tooth (full bony), includes local anesthesia.
s		Removal of four impacted wisdom teeth (full bony), includes local anesthesia.
	D7240	Removal of single impacted wisdom tooth (full bony), includes local anesthesia.
u		Extraction of two erupted mandibular teeth, includes local anesthesia.
	D7110	Extraction of a single erupted mandibular tooth, includes local anesthesia.
v		Extraction of four erupted mandibular teeth, includes local anesthesia.
	D7110	Extraction of a single erupted mandibular tooth, includes local anesthesia.

Table 6.2 (continued)

Vignettes for multiple procedures survey:
Oral and maxillofacial surgery

Svc	CPT code(s)	Vignette
x		Bilateral reconstruction of mandibular ramus, horizontal, vertical, "C", or "L" osteotomy, without bone graft.
	21193	Unilateral reconstruction of mandibular ramus, horizontal, vertical, "C", or "L" osteotomy, without bone graft.
z		Bilateral reconstruction of mandibular ramus, horizontal, vertical, "C", or "L" osteotomy, with bone graft (includes obtaining graft).
	21194	Unilateral reconstruction of mandibular ramus, horizontal, vertical, "C", or "L" osteotomy, with bone graft (includes obtaining graft).
ab		Bilateral reconstruction of mandibular ramus, sagittal split, without internal rigid fixation.
	21195	Unilateral reconstruction of mandibular ramus, sagittal split, without internal rigid fixation.
ad		Bilateral reconstruction of mandibular ramus, sagittal split, with internal rigid fixation.
	21196	Unilateral reconstruction of mandibular ramus, sagittal split, with internal rigid fixation.
af)		Bilateral osteotomy, mandible, segmental.
	21198	Unilateral osteotomy, mandible, segmental.
ah		Bilateral osteotomy, maxilla, segmental (eg, Wassmund or Schuchard).
	21206	Unilateral osteotomy, maxilla, segmental (eg, Wassmund or Schuchard).

Table 6.2 (continued)

Vignettes for multiple procedures survey:
Orthopedic surgery

Svc	CPT code(s)	Vignette
b		Bilateral bunionectomy, Keller/McBride/Mayo type.
	28292	Bunionectomy, Keller/McBride/Mayo type.
d		Bunionectomy, Keller/McBride/Mayo type and hammertoe operation on one toe.
	28292	Bunionectomy, Keller/McBride/Mayo type.
	28285	Hammertoe operation on one toe.
g		Arthroscopic meniscectomy (medial or lateral) with anterior cruciate ligament reconstruction.
	29881	Arthroscopic meniscectomy (medial or lateral).
	29888	Anterior cruciate ligament reconstruction.
i		Bilateral total knee replacement.
	27447	Total knee replacement.
k		Open reduction and internal fixation of bilateral Colles' fracture.
	25605	Open reduction and internal fixation of Colles' fracture.
m		Bilateral decompression of carpal tunnel.
	64721	Decompression of carpal tunnel.
o		Decompression of carpal tunnel and tendon sheath incision for trigger finger.
	64721	Decompression of carpal tunnel.
	26055	Tendon sheath incision for trigger finger.
q		Open reduction and internal fixation of right and left femoral shaft fractures.
	27506	Open reduction and internal fixation of femoral shaft fracture.

Table 6.2 (continued)

Vignettes for multiple procedures survey:
Orthopedic surgery

Svc	CPT code(s)	Vignette
t		Open reduction and internal fixation of femoral shaft fracture and bimalleolar ankle fracture.
	27506	Open reduction and internal fixation of femoral shaft fracture.
	27814	Open reduction and internal fixation of bimalleolar ankle fracture.
u		Open reduction and internal fixation of right and left femoral shaft fractures and humeral shaft fracture.
	27506-50	Open reduction and internal fixation of right and left femoral shaft fractures.
	24515	Open reduction and internal fixation of humeral shaft fracture, with plate screws.
x		Open treatment acetabular fracture(s) (crushed pelvis) and femoral neck fracture - requiring internal fixation.
	27227	Open treatment acetabular fracture(s) (crushed pelvis) involving anterior or posterior column, or a fracture running transversely across the acetabulum, with internal fixation.
	27236	Open treatment of femoral neck fracture - requiring internal fixation.
z		Repair of five lacerated flexor tendons - wrist.
	25260	Repair of lacerated flexor tendon - wrist.
ab		Repair of five lacerated flexor tendons - wrist, with repair lacerated median nerve - wrist.
		Repair of five lacerated flexor tendons - wrist.
	64856	Repair lacerated median nerve - wrist.
ae		Repair of lacerated flexor tendon - finger, with repair of lacerated digital nerve - finger.
	26350	Repair of lacerated flexor tendon - finger.
	64831	Repair of lacerated digital nerve - finger.

Table 6.2 (continued)

Vignettes for multiple procedures survey:
Orthopedic surgery

Svc	CPT code(s)	Vignette
ag		Repair of lacerated flexor tendon - finger, with repair of lacerated digital nerve - finger, with open reduction and internal fixation of proximal phalanx fracture - finger.
	26350	Repair of lacerated flexor tendon - finger.
	64830	Repair of lacerated digital nerve - finger.
	26735	Open reduction and internal fixation of proximal phalanx fracture - finger.
ai		Radical resection of malignant neoplasm hip area and replacement with allograft and total hip replacement and fixation of allograft to femur.
	27049	Radical resection of malignant neoplasm hip area replacement
	27130	Total hip replacement with allograft
	27507	Fixation of allograft to femur

Table 6.2 (continued)

Vignettes for multiple procedures survey:
Otolaryngology

Svc	CPT code(s)	Vignette
c		Septoplasty with submucous resection of nasal turbinate
	30520	Septoplasty
	30140	Submucous resection of nasal turbinate
e		Bilateral tympanostomy (requiring insertion of ventilating tubes).
	69436	Tympanostomy (requiring insertion of ventilating
	69436	tubes).
g		Tonsillectomy and adenoidectomy for child under 12 yrs. old with bilateral tympanostomy (requiring insertion of ventilating tubes)
	42820	Tonsillectomy and adenoidectomy for child under 12 yrs. old.
	69436	Bilateral tympanostomy (requiring insertion of ventilating tubes)
j		Planned tracheostomy, patient greater than two years old with direct diagnostic laryngoscopy
	31600	Planned tracheostomy, patient greater than two years old.
	31525	Direct diagnostic laryngoscopy.
l		Planned tracheostomy, patient greater than two years old with direct diagnostic laryngoscopy with diagnostic bronchoscopy.
	31600	Planned tracheostomy, patient greater than two years old.
	31525	Direct diagnostic laryngoscopy.
	31622	Diagnostic bronchoscopy.
m		Direct diagnostic laryngoscopy with diagnostic bronchoscopy
	31525	Direct diagnostic laryngoscopy.
	31622	Diagnostic bronchoscopy.

Table 6.2 (continued)

Vignettes for multiple procedures survey:
Otolaryngology

Svc	CPT code(s)	Vignette
p		Total laryngectomy without radical neck dissection with modified radical neck dissection.
	31360	Total laryngectomy without radical neck dissection.
	38724	Modified radical neck dissection.
r		Planned tracheostomy, patient greater than two years old with direct diagnostic laryngoscopy with pharyngolaryngectomy with radical neck dissection with reconstruction, without free flap (microvascular transfer)
	31600	Planned tracheostomy, patient greater than two years old.
	31525	Direct diagnostic laryngoscopy.
	31395	Pharyngolaryngectomy with radical neck dissection with reconstruction, without free flap (microvascular transfer).
t		Planned tracheostomy, patient greater than two years old with direct diagnostic laryngoscopy with pharyngolaryngectomy with radical neck dissection with reconstruction, with free flap (microvascular transfer)
	31600	Planned tracheostomy, patient greater than two years old.
	31525	Direct diagnostic laryngoscopy.
	31395	Pharyngolaryngectomy with radical neck dissection with reconstruction, without free flap (microvascular transfer).
	15755	Free flap (microvascular transfer).
w		Intranasal anterior ethmoidectomy with nasal antral windows.
	31200	Intranasal anterior ethmoidectomy.
	31020	Nasal antral windows.
y		Nasal polypectomy, extensive, with intranasal anterior ethmoidectomy.
	30115	Nasal polypectomy, extensive.
	31200	Intranasal anterior ethmoidectomy.

Table 6.2 (continued)

Vignettes for multiple procedures survey:
Otolaryngology

Svc	CPT code(s)	Vignette
aa		Planned tracheostomy, patient greater than two years old with glossectomy; composite procedure with resection floor of mouth, mandibular resection, and radical neck dissection (Commando type).
	31600	Planned tracheostomy, patient greater than two years old.
	41155	Glossectomy; composite procedure with resection floor of mouth, mandibular resection, and radical neck dissection (Commando type).
ac		Planned tracheostomy, patient greater than two years old with glossectomy; composite procedure with resection floor of mouth, mandibular resection, and radical neck dissection (Commando type) with myocutaneous muscle flap.
	31600	Planned tracheostomy, patient greater than two years old.
	41155	Glossectomy; composite procedure with resection floor of mouth, mandibular resection, and radical neck dissection (Commando type).
	15732	Myocutaneous muscle flap.
ae		Palatopharyngoplasty (eg, uvulopalatopharyngoplasty, uvuvlopharyngoplasty) with septoplasty.
	42145	Palatopharyngoplasty (eg, uvulopalatopharyngoplasty, uvuvlopharyngoplasty)
	30520	Septoplasty
af		Palatopharyngoplasty (eg, uvulopalatopharyngoplasty, uvuvlopharyngoplasty) with septoplasty with submucous resection of nasal turbinate.
	42145	Palatopharyngoplasty (eg, uvulopalatopharyngoplasty, uvuvlopharyngoplasty)
	30520	Septoplasty
	30140	Submucous resection of nasal turbinate

Table 6.2 (continued)

Vignettes for multiple procedures survey:
Podiatry

Svc	CPT code(s)	Vignette
b		Capsulotomy of metatarsalophalangeal joint for contracture, two (2) joints.
	28270	Capsulotomy of the metatarsophalangeal joint for contracture, single joint.
d		Excision of nail and nail matrixectomy for permanent removal, two nails, right foot.
	11750	Excision of nail and nail matrixectomy for permanent removal, single nail, right foot.
e		Excision of nail and nail matrixectomy for permanent removal, all digits (10 nails).
	11750	Excision of nail and nail matrixectomy for permanent removal, single nail, right foot.
g		Hammertoe operation on two toes, same foot
	28285	Hammertoe operation on one toe.
h		Hammertoe operation on two toes, one each foot.
	28285	Hammertoe operation on one toe.
i		Hammertoe operation on one toe and excision of nail and nail matrixectomy for permanent removal, single nail, right foot.
	28285	Hammertoe operation on one toe.
	11750	Excision of nail and nail matrixectomy for permanent removal, single nail, right foot.
j		Hammertoe operation on one toe and capsulotomy of the metatarsophalangeal joint for contracture.
	28285	Hammertoe operation on one toe.
	28270	Capsulotomy of the metatarsophalangeal joint for contracture, single joint.
l		Bilateral bunionectomy, Keller/McBride/Mayo type.
	28292	Bunionectomy, Keller/McBride/Mayo type, single toe.

Table 6.2 (continued)

Vignettes for multiple procedures survey:
Podiatry

Svc	CPT code(s)	Vignette
m		Bunionectomy, Keller/McBride/Mayo type and hammertoe operation on one toe.
	28292	Bunionectomy, Keller/McBride/Mayo type, single toe.
	28285	Hammertoe operation on one toe.
p		Hemiphalangectomy, two toes.
	28160	Hemiphalangectomy, single toe.
r		Excision bilateral interdigital Morton's neuroma.
	28080	Excision single interdigital Morton's neuroma.
s		Excision bilateral interdigital Morton's neuroma and partial metatarsectomy.
	28080	Excision bilateral interdigital Morton's neuroma.
	28140	Partial metatarsectomy.
t		Excision single interdigital Morton's neuroma and hemiphalangectomy, one toe.
	28080	Excision single interdigital Morton's neuroma.
	28160	Hemiphalangectomy, single toe.
u		Hammertoe operation on one toe and excision of Morton's neuroma.
	28285	Hammertoe operation on one toe.
	28080	Excision single interdigital Morton's neuroma.
w		Excision of two benign lesions (including simple closure) on the right foot, 1.1 to 2.0 cm.
	11422	Excision of single benign lesion (including simple closure) on the right foot, 1.1 to 2.0 cm.

Table 6.2 (continued)

Vignettes for multiple procedures survey:
Cardiothoracic surgery

Svc	CPT code(s)	Vignette
c		AVR with a MVR.
	33405	Aortic Valve Replacement (AVR), with cardiopulmonary bypass.
	33430	Mitral Valve Replacement (MVR), with cardiopulmonary bypass.
e		AVR with CABGX3.
	33405	Aortic Valve Replacement (AVR), with cardiopulmonary bypass.
	33512	Coronary artery bypass (CABGX3), three venous coronary grafts.
f		MVR with CABGX3.
	33430	Mitral Valve Replacement (MVR), with cardiopulmonary bypass.
	33512	Coronary artery bypass (CABGX3), three venous coronary grafts.
h		Mitral valve repair with CABGX3.
	33425	Mitral valve repair, with cardiopulmonary bypass.
	33512	Coronary artery bypass (CABGX3), three venous coronary grafts.
k		Diagnostic bronchoscopy with mediastinoscopy.
	31622	Diagnostic bronchoscopy (flexible or rigid), with or without cell brushing.
	39400	Mediastinoscopy, with or without biopsy.
m		Diagnostic bronchoscopy with major thoracotomy, with exploration and biopsy.
	31622	Diagnostic bronchoscopy (flexible or rigid), with or without cell brushing.
	32100	Major thoracotomy, with exploration and biopsy.

Table 6.2 (continued)
Vignettes for multiple procedures survey:
Cardiothoracic surgery

Svc	CPT code(s)	Vignette
n		Mediastinoscopy with major thoracotomy with exploration and biopsy.
	39400	Mediastinoscopy, with or without biopsy.
	32100	Major thoracotomy, with exploration and biopsy.
p		Diagnostic bronchoscopy with total lobectomy.
	31622	Diagnostic bronchoscopy (flexible or rigid), with or without cell brushing.
	32480	Lobectomy, total or segmental.
q		Mediastinoscopy with total lobectomy.
	39400	Mediastinoscopy, with or without biopsy.
	32480	Lobectomy, total or segmental.
s		Diagnostic bronchoscopy with total pneumonectomy.
	31622	Diagnostic bronchoscopy (flexible or rigid), with or without cell brushing.
	32440	Pneumonectomy, total.
u		CABGX3 with insertion or replacement of pacemaker pulse generator or AICD.
	33512	Coronary artery bypass (CABGX3), three venous coronary grafts.
	33212	Insertion or replacement of pacemaker pulse generator or automatic implantable cardioverter-defibrilator (AICD) pulse generator only.
w		Carotid endarterectomy with CABGX3.
	35301	Carotid endarterectomy, with or without patch graft, by neck incision.
	33512	Coronary artery bypass (CABGX3), three venous coronary grafts.
z		Iliofemoral endarterectomy with femoral-popliteal bypass vein graft.
	35355	Iliofemoral endarterectomy, with or without patch graft.
	35556	Femoral-popliteal bypass vein graft.

Table 6.2 (continued)

Vignettes for multiple procedures survey:
Urology

Svc	CPT code(s)	Vignette
b		Simple bilateral orchiectomy.
	54520	Simple orchiectomy (including subcapsular), with or without testicular prosthesis, scrotal or inguinal approach.
d		TURP with simple bilateral orchiectomy.
	52601	Transurethral resection of prostate (TURP)
	54520	Simple bilateral orchiectomy.
	54520	
g		TURP with inguinal hernia repair, over age 5.
	52601	Transurethral resection of prostate (TURP)
	49505	Inguinal hernia repair, over age 5.
h		TURP with simple litholapaxy: crushing or fragmentation of calculus in bladder and removal of fragments.
	52601	Transurethral resection of prostate (TURP)
	52317	Simple litholapaxy: crushing or fragmentation of calculus by any means in bladder and removal of fragments, small (less than 2.5 cm).
j		Bilateral orchiopexy.
	54640	Orchiopexy, any type.
m		Extracorporeal shock wave lithotripsy with cystourethroscopy with insertion of indwelling ureteral stent.
	50590	Extracorporeal shock wave lithotripsy.
	52332	Cystourethroscopy with insertion of indwelling ureteral stent (eg, Gibbons or double-J type).
p		Complete cystectomy with continent diversion, using any segment of small and/or large bowel to construct neobladder with temporary gastrostomy.
	51596	Complete cystectomy with continent diversion, any technique, using any segment of small and/or large bowel to construct neobladder.
	43830	Temporary gastrostomy, (tube, rubber or plastic).

Table 6.2 (continued)

Vignettes for multiple procedures survey:
Urology

Svc	CPT code(s)	Vignette
s		Percutaneous nephrostolithotomy or pyelostolithotomy, up to 2 cm with a nephrostomy, nephrotomy with drainage.
	50080	Percutaneous nephrostolithotomy or pyelostolithotomy, with or without dilation, endoscopy, lithotripsy, stenting or basket extraction, up to 2 cm.
	50040	Nephrostomy, nephrotomy with drainage.
v		Cystostomy, cystotomy with drainage with an abdomino-vaginal vesical neck suspension, (Stamey, Raz, modified Pereyra).
	51040	Cystostomy, cystotomy with drainage.
	51845	Abdomino-vaginal vesical neck suspension, with or without endoscopic control (Stamey, Raz, modified Pereyra).
y		Radical orchiectomy, for tumor, inguinal approach with an insertion of testicular prosthesis.
	54530	Radical orchiectomy, for tumor, inguinal approach.
	54660	Insertion of testicular prosthesis.
ab		Cystourethroscopy with complex cystometrogram.
	52000	Cystourethroscopy.
	51726	Complex cystometrogram (eg, calibrated electronic equipment).
af		Complex cystometrogram with a complex uroflowmetry.
	51741	Complex uroflowmetry (eg, calibrated electronic equipment).
	51726	Complex cystometrogram (eg, calibrated electronic equipment).
ag		Urethral pressure profile studies (UPP) with an intra-abdominal voiding pressure studies (AP).
	51772	Urethral pressure profile studies (UPP) (urethral closure pressure profile), any technique.
	51795	Voiding pressure studies (vp), intra-abdominal voiding pressure (ap) (rectal, gastric, intraperitoneal)

Table 6.2 (continued)

Vignettes for multiple procedures survey:
Urology

Svc	CPT code(s)	Vignette
ah		Complex cystometrogram with a urethral pressure profile studies (UPP) with an intra-abdominal voiding pressure studies (AP).
	51726	Complex cystometrogram (eg, calibrated electronic equipment).
	51772	Urethral pressure profile studies (UPP) (urethral closure pressure profile), any technique.
	51795	Voiding pressure studies (vp), intra-abdominal voiding pressure (ap) (rectal, gastric, intraperitoneal)
ai		Complex cystometrogram with a complex uroflowmetry with an intra-abdominal voiding pressure studies (AP).
	51726	Complex cystometrogram (eg, calibrated electronic equipment).
	51741	Complex uroflowmetry (eg, calibrated electronic equipment).
	51795	Voiding pressure studies (vp), intra-abdominal voiding pressure (ap) (rectal, gastric, intraperitoneal)

Table 6.3

Survey estimates of intra-service work and time for selected services: multiple procedures

Primary CPT	Secondary CPT	Description	Intra-service Work Mean	Work S.E*	Time (mins) Mean	Time (mins) S.E*	No.of responses
General surgery							
srvae	44140 af	Expl lap, trauma w tot splen w pt colctmy	1454	3.9%	193	4.2%	25
49500	49500 b	Bilat inguinal hernia rpr child	431	5.0	74	3.3	24
19240	19120 i	Excis breast mass w mod rad mastectomy	844	1.4	138	3.0	25
Podiatry							
28270	28270 b	Capsul metars jnt fr contrctr, two jnt	156	13.6	30	9.8	22
28285	28285 g	Hammertoe oper on two toes, same ft	312	4.1	59	2.1	22
29292	28285 m	Bunionectomy, sngl and hammertoe, one toe	430	2.6	90	1.1	22
Oral and maxillofacial surgery							
21195	21195 ab	Bilat recnstr mnd ram, sag spl wo int fix	1296	14.7	143	9.8	21
21470	21422 c	Tx mandib fx X tx pal, max fx, Lefort I	1924	5.2	272	4.4	21
21240	21240 e	Bilat TMJ arthroplasty	1413	4.7	231	4.9	21
Neurosurgery							
64719	64721 aa	Carpal tunnel rpr w ulnar nerve decomprss	346	4.4	83	2.7	14
61700	61700 p	Craniotomy, bilat or mult, clip aneurysm	3715	6.4	424	5.5	15
srv_r	61340 t	Crantmy, clip anrysm w ECIC w subtem dcmp	4198	5.0	469	4.6	15
Obstetrics and gynecology							
56300	58120 d	D&C w diagnostic laparoscopy	288	3.0	46	3.2	15
58150	57240 h	Abdom hystrctmy w anter colporrhaphy	777	1.3	127	3.6	15
58260	57260 n	Vag hystrctmy w comb anter colporrhaphy	766	2.1	110	4.6	15

Table 6.3 (continued)

Survey estimates of intra-service work and time for selected services: multiple procedures

Primary CPT	Secondary CPT		Description	Intra-service Work Mean	Work S.E*	Time (mins) Mean	Time (mins) S.E*	No.of responses
Ophthalmology								
65730	66984	c	Corneal trnsplnt w cataract remov & IOL	1368	4.2%	124	1.8%	18
66985	67010	k	Anter vitrectomy w secondary IOL	791	4.4	73	5.3	18
67107	65280	u	Rpr corn lacer w rpr reatt by sclr bk	1280	2.1	174	2.1	17
Orthopedic surgery								
64831	26350	ae	Rpr lacr flxr tendn finger w rpr digt nrv	730	4.1	107	3.6	9
27447	27447	i	Bilat tot knee replacement	2027	6.1	252	5.8	12
64721	26055	o	Carpal tunnel rpr w tndn shth incis fngr	228	4.1	57	5.5	13
Otolaryngology								
srvaa	15732	ac	Pln trch w glssctmy & rad nck w musc flap	2277	3.0	533	2.6	9
42820	69436	g	T & A w bilat tympanostomy	273	8.2	47	5.9	10
31360	38724	p	Tot laryngctmy w modif radic neck dissect	1397	5.4	260	6.9	10
Cardiothoracic surgery								
33405	33430	c	AVR w a MVR	2689	4.4	278	5.3	17
33405	33512	e	AVR w CABGX3	2497	4.6	292	4.8	17
32480	39400	q	Mediastinoscopy w tot lobectomy	1182	1.8	184	3.0	17
Urology								
52601	srv_b	d	TURP w simple bilat orchiectomy	1027	2.9	110	2.9	21
51596	43830	p	Complete cystectomy w temp gastrostomy	2470	0.7	482	1.4	18
54530	54660	y	Radical orchiectomy w insert test prosth	645	3.1	78	3.0	21

Table 6.4

Group values of pre-/post- and total-service work for selected services: multiple procedures

Primary CPT	Secondary CPT	Svc	Description	Service Work Pre/Post	Service Work Total
General surgery					
srvae	44140	af	Expl lap, trauma w tot splen w pt colctmy	895	2349
49500	49500	b	Bilat inguinal hernia rpr child	246	677
19240	19120	i	Excis breast mass w mod rad mastectomy	785	1629
Podiatry					
28270	28270	b	Capsul metars jnt fr contrctr, two jnt	289	445
28285	28285	g	Hammertoe oper on two toes, same ft	377	689
29292	28285	m	Bunionectomy, sngl and hammertoe, one toe	516	946
Oral and maxillofacial surgery					
21195	21195	ab	Bilat recnstr mnd ram, sag spl wo int fix	1174	2470
21470	21422	c	Tx mandib fx & tx pal, max fx, Lefort I	423	2348
21240	21240	e	Bilat TMJ arthroplasty	583	1996
Neurosurgery					
64719	64721	aa	Carpal tunnel rpr w ulnar nerve decomprss	222	568
61700	61700	p	Craniotomy, bilat or mult, clip aneurysm	1147	4862
srv_r	61340	t	Crantmy, clip anrysm w ECIC w subtem dcmp	1333	5530
Obstetrics and gynecology					
56300	58120	d	D&C w diagnostic laparoscopy	155	443
58150	57240	h	Abdom hystrctmy w anter colporrhaphy	729	1506
58260	57260	n	Vag hystrctmy w comb anter colporrhaphy	683	1449

Table 6.4 (continued)
Group values of pre-/post- and total-service work for selected services: multiple procedures

Primary CPT	Secondary CPT	Svc	Description	Service Work Pre/Post	Service Work Total
Ophthalmology					
65730	66984	c	Corneal trnsplnt w cataract remov & IOL	400	1768
66985	67010	k	Anter vitrectomy w secondary IOL	460	1251
67107	65280	u	Rpr corn lacer w rpr reatt by sclr bk	589	1869
Orthopedic surgery					
64831	26350	ae	Rpr lacr flxr tendn finger w rpr digt nrv	453	1183
27447	27447	i	Bilat tot knee replacement	926	2953
64721	26055	o	Carpal tunnel rpr w tndn shth incis fngr	277	504
Otolaryngology					
srvaa	15732	ac	Pln trch w glssctmy & rad nck w musc flap	1119	3396
42820	srv_e	g	T & A w bilat tympanostomy	228	501
31360	38724	p	Tot laryngctmy w modif radic neck dissect	792	2189
Plastic surgery					
15820	15820	z1	Bilat blephoroplasty, low lid	281	654
15822	15822	z3	Bilat blephoroplasty, upp lid	284	613
19330	19330	z5	Bilat remov mammary implant mat	381	912
Cardiothoracic surgery					
33405	33430	c	AVR w a MVR	1364	4053
33405	33512	e	AVR w CABGX3	1331	3828
32480	39400	q	Mediastinoscopy w tot lobectomy	849	2031
Urology					
52601	srv_b	d	TURP w simple bilat orchiectomy	494	1521
51596	43830	p	Complete cystectomy w temp gastrostomy	1362	3832
54530	54660	y	Radical orchiectomy w insert test prosth	364	1009

Table 6.5

Comparison of intra-service time of primary and secondary codes for selected services

Primary CPT	Secondary CPT	Svc	Description	Intra-time primary	Added[a] intra-time secndry	Intra-[b] time secndry alone	Ratio[c]
General surgery							
srvae	44140	af	Expl lap, trauma w tot splen w pt colctmy	123	70	104	0.67
49500	49500	b	Bilat inguinal hernia rpr child	40	34	40	0.85
19240	19120	i	Excis breast mass w mod rad mastectomy	104	34	35	0.98
Podiatry							
28270	28270	b	Capsul metars jnt fr contrctr, two jnt	17	13	17	0.76
28285	28285	g	Hammertoe oper on two toes, same ft	33	26	33	0.79
29292	28285	m	Bunionectomy, sngl and hammertoe, one toe	60	30	33	0.91
Oral and maxillofacial surgery							
21195	21195	ab	Bilat recnstr mnd ram, sag spl wo int fix	79	64	79	0.82
21470	21422	c	Tx mandib fx & tx pal, max fx, Lefort I	177	95	112	0.85
21240	21240	e	Bilat TMJ arthroplasty	137	94	137	0.69
Neurosurgery							
64719	64721	aa	Carpal tunnel rpr w ulnar nerve decomprss	56	27	35	0.77
61700	61700	p	Craniotomy, bilat or mult, clip aneurysm	280	144	280	0.51
srv_r	61340	t	Crantmy, clip anrysm w ECIC w subtem dcmp	440	29	95	0.30

[a] Added intra-time is the intra-time of the multiple vignette minus the intra-time of the primary service (unless indicated).
[b] Intra-time of the secondary service is the time of the secondary service performed alone.
[c] Ratio = Added intra-service time of secondary service divided by intra-service time of secondary service performed alone.

Table 6.5 (continued)

Comparison of intra-service time of primary and secondary codes for selected services

Primary CPT	Secondary CPT	Svc	Description	Intra-time primary	Added[a] intra-time secndry	Intra-[b] time secndry alone	Ratio[c]
Obstetrics and gynecology							
56300	58120	d	D&C w diagnostic laparoscopy	36	10	13	0.74
58150	57240	h	Abdom hystrctmy w anter colporrhaphy	89	38	45	0.84
58260	57260	n	Vag hystrctmy w comb anter colporrhaphy	70	40	61	0.65
Ophthalmology							
65730	66984	c	Corneal trnsplnt w cataract remov & IOL	85	39	54	0.73
66985	67010	k	Anter vitrectomy w secondary IOL	40	33	45	0.72
67107	65280	u	Rpr corn lacer w rpr reatt by sclr bk	107	67	68	0.98
Orthopedic surgery							
64831	26350	ae	Rpr lacr flxr tendn finger w rpr digt nrv	74	33	53	0.62
27447	27447	i	Bilat tot knee replacement	139	113	139	0.81
64721	26055	o	Carpal tunnel rpr w tndn shth incis fngr	35	22	25	0.87
Otolaryngology							
srvaa	15732	ac	Pln trch w glssctmy & rad nck w musc flap	368	165	183	0.90
42820	srv_e	g	T & A w bilat tympanostomy	29	18	15	1.17
31360	38724	p	Tot laryngctmy w modif radic neck dissect	139	121	155	0.78

[a] Added intra-time is the intra-time of the multiple vignette minus the intra-time of the primary service (unless indicated).
[b] Intra-time of the secondary service is the time of the secondary service performed alone.
[c] Ratio = Added intra-service time of secondary service divided by intra-service time of secondary service performed alone.

Table 6.5 (continued)

Comparison of intra-service time of primary and secondary codes for selected services

Primary CPT	Secondary CPT	Svc	Description	Intra-time primary	Added[a] intra-time secndry	Intra-[b] time secndry alone	Ratio[c]
Plastic surgery							
15820	15820	z1	Bilat blephoroplasty, low lid	36	27	36	0.75
15822	15822	z3	Bilat blephoroplasty, upp lid	33	26	33	0.79
19330	19330	z5	Bilat remov mammary implant mat	52	53	52	1.02
Cardiothoracic surgery							
33405	33430	c	AVR w a MVR	186	92	201	0.46
33405	33512	e	AVR w CABGX3	186	106	200	0.53
32480	39400	q	Mediastinoscopy w tot lobectomy	131	53	46	1.15
Urology							
52601	srv_b	d	TURP w simple bilat orchiectomy	62	48	56	0.85
51596	43830	p	Complete cystectomy w temp gastrostomy	445	37	51	0.73
54530	54660	y	Radical orchiectomy w insert test prosth	58	20	40	0.49

[a] Added intra-time is the intra-time of the multiple vignette minus the intra-time of the primary service (unless indicated).
[b] Intra-time of the secondary service is the time of the secondary service performed alone.
[c] Ratio = Added intra-service time of secondary service divided by intra-service time of secondary service performed alone.

Table 6.6

Comparison of intra-service work[a] of primary and secondary codes for selected services

Primary CPT	Secondary CPT	Svc	Description	Intra-work primary	Added[b] intra-work secndry	Intra-[c] work secndry alone	Ratio[d]
General surgery							
srvae	44140	af	Expl lap, trauma w tot splen w pt colctmy	972	482	800	0.60
49500	49500	b	Bilat inguinal hernia rpr child	280	151	280	0.54
19240	19120	i	Excis breast mass w mod rad mastectomy	730	114	170	0.67
Podiatry							
28270	28270	b	Capsul metars jnt fr contrctr, two jnt	101	55	101	0.54
28285	28285	g	Hammertoe oper on two toes, same ft	187	125	187	0.67
29292	28285	m	Bunionectomy, sngl and hammertoe, one toe	271	159	187	0.85
Oral and maxillofacial surgery							
21195	21195	ab	Bilat recnstr mnd ram, sag spl wo int fix	830	466	830	0.56
21470	21422	c	Tx mandib fx & tx pal, max fx, Lefort I	1140	784	830	0.94
21240	21240	e	Bilat TMJ arthroplasty	810	603	810	0.74
Neurosurgery							
64719	64721	aa	Carpal tunnel rpr w ulnar nerve decomprss	230	116	165	0.70
61700	61700	p	Craniotomy, bilat or mult, clip aneurysm	2430	1285	2430	0.53
srv_r	61340	t	Crantmy, clip anrysm w ECIC w subtem dcmp	3927	271	745	0.36

[a]Intra-work on common scale.
[b]Added intra-work is the intra-work of the multiple vignette minus the intra-work of the primary service (unless indicated).
[c]Intra-work of the secondary service is the work of the secondary service performed alone.
[d]Ratio = Added intra-service work of secondary service divided by intra-service work of secondary service performed alone.

Table 6.6 (continued)

Comparison of intra-service work[a] of primary and secondary codes for selected services

Primary CPT	Secondary CPT	Svc	Description	Intra-work primary	Added[b] intra-work secndry	Intra-[c] work secndry alone	Ratio[d]
Obstetrics and gynecology							
56300	58120	d	D&C w diagnostic laparoscopy	235	53	80	0.66
58150	57240	h	Abdom hystrctmy w anter colporrhaphy	600	177	195	0.91
58260	57260	n	Vag hystrctmy w comb anter colporrhaphy	500	266	280	0.95
Ophthalmology							
65730	66984	c	Corneal trnsplnt w cataract remov & IOL	815	553	640	0.86
66985	67010	k	Anter vitrectomy w secondary IOL	435	356	420	0.85
67107	65280	u	Rpr corn lacer w rpr reatt by sclr bk	900	380	380	1.00
Orthopedic surgery							
64831	26350	ae	Rpr lacr flxr tendn finger w rpr digt nrv	500	230	295	0.78
27447	27447	i	Bilat tot knee replacement	1140	887	1140	0.78
64721	26055	o	Carpal tunnel rpr w tndn shth incis fngr	165	63	90	0.69
Otolaryngology							
srvaa	15732	ac	Pln trch w glssctmy & rad nck w musc flap	1552	725	755	0.96
42820	srv_e	g	T & A w bilat tympanostomy	150	123	148	0.83
31360	38724	p	Tot laryngctmy w modif radic neck dissect	800	597	735	0.81

[a]Intra-work on common scale.
[b]Added intra-work is the intra-work of the multiple vignette minus the intra-work of the primary service (unless indicated).
[c]Intra-work of the secondary service is the work of the secondary service performed alone.
[d]Ratio = Added intra-service work of secondary service divided by intra-service work of secondary service performed alone.

Table 6.6 (continued)

Comparison of intra-service work[a] of primary and secondary codes for selected services

Primary CPT	Secondary CPT	Svc	Description	Intra-work primary	Added[b] intra-work secndry	Intra-[c] work secndry alone	Ratio[d]
Plastic surgery							
15820	15820	z1	Bilat blephoroplasty, low lid	234	139	234	0.59
15822	15822	z3	Bilat blephoroplasty, upp lid	188	141	188	0.75
19330	19330	z5	Bilat remov mammary implant mat	377	154	377	0.41
Cardiothoracic surgery							
33405	33430	c	AVR w a MVR	1600	1089	1650	0.66
33405	33512	e	AVR w CABGX3	1600	897	1580	0.57
32480	39400	q	Mediastinoscopy w tot lobectomy	945	237	265	0.89
Urology							
52601	srv_b	d	TURP w simple bilat orchiectomy	690	337	425	0.79
51596	43830	p	Complete cystectomy w temp gastrostomy	2300	170	225	0.75
54530	54660	y	Radical orchiectomy w insert test prosth	450	195	295	0.66

[a]Intra-work on common scale.
[b]Added intra-work is the intra-work of the multiple vignette minus the intra-work of the primary service (unless indicated).
[c]Intra-work of the secondary service is the work of the secondary service performed alone.
[d]Ratio = Added intra-service work of secondary service divided by intra-service work of secondary service performed alone.

Table 6.7

Comparison of pre-/post-service work[a] of primary and secondary codes for selected services

Primary CPT	Secondary CPT	Svc	Description	Pre/Post work primary	Added[b] pre/post work secndry	Pre/Post[c] work secndry alone	Ratio[d]
General surgery							
srvae	44140	af	Expl lap, trauma w tot splen w pt colctmy	738	157	895	0.18
49500	49500	b	Bilat inguinal hernia rpr child	220	26	220	0.12
19240	19120	i	Excis breast mass w mod rad mastectomy	730	55	310	0.18
Podiatry							
28270	28270	b	Capsul metars jnt fr contrctr, two jnt	270	19	270	0.07
28285	28285	g	Hammertoe oper on two toes, same ft	346	31	346	0.09
29292	28285	m	Bunionectomy, sngl and hammertoe, one toe	486	30	346	0.09
Oral and maxillofacial surgery							
21195	21195	ab	Bilat recnstr mnd ram, sag spl wo int fix	1149	25	1149	0.02
21470	21422	c	Tx mandib fx & tx pal, max fx, Lefort I	270	153	639	0.24
21240	21240	e	Bilat TMJ arthroplasty	490	93	490	0.19
Neurosurgery							
64719	64721	aa	Carpal tunnel rpr w ulnar nerve decomprss	195	27	225	0.12
61700	61700	p	Craniotomy, bilat or mult, clip aneurysm	1040	107	1040	0.10
srv_r	61340	t	Crantmy, clip anrysm w ECIC w subtem dcmp	1188	145	405	0.36

[a] Pre/post work on the common scale.
[b] Added pre/post work is the pre/post work of the multiple vignette minus the pre/post work of the primary service (unless indicated).
[c] Pre/post work of the secondary service is the work of the secondary service performed alone.
[d] Ratio = Added pre/post work of secondary service divided by pre/post work of secondary service performed alone.

Table 6.7 (continued)

Comparison of pre-/post-service work[a] of primary and secondary codes for selected services

Primary CPT	Secondary CPT	Svc	Description	Pre/Post work primary	Added[b] pre/post work secndry	Pre/Post[c] work secndry alone	Ratio[d]
Obstetrics and gynecology							
56300	58120	d	D&C w diagnostic laparoscopy	120	35	158	0.22
58150	57240	h	Abdom hystrctmy w anter colporrhaphy	690	39	340	0.11
58260	57260	n	Vag hystrctmy w comb anter colporrhaphy	630	53	475	0.11
Ophthalmology							
65730	66984	c	Corneal trnsplnt w cataract remov & IOL	353	47	340	0.14
66985	67010	k	Anter vitrectomy w secondary IOL	350	110	240	0.46
67107	65280	u	Rpr corn lacer w rpr reatt by sclr bk	490	99	306	0.32
Orthopedic surgery							
64831	26350	ae	Rpr lacr flxr tendn finger w rpr digt nrv	378	75	262	0.29
27447	27447	i	Bilat tot knee replacement	815	111	815	0.14
64721	26055	o	Carpal tunnel rpr w tndn shth incis fngr	225	52	165	0.31
Otolaryngology							
srvaa	15732	ac	Pln trch w glssctmy & rad nck w musc flap	1025	94	714	0.13
42820	srv_e	g	T & A w bilat tympanostomy	195	33	96	0.35
31360	38724	p	Tot laryngctmy w modif radic neck dissect	710	82	584	0.14

[a] Pre/post work on the common scale.
[b] Added pre/post work is the pre/post work of the multiple vignette minus the pre/post work of the primary service (unless indicated).
[c] Pre/post work of the secondary service is the work of the secondary service performed alone.
[d] Ratio = Added pre/post work of secondary service divided by pre/post work of secondary service performed alone.

Table 6.7 (continued)

Comparison of pre-/post-service work[a] of primary and secondary codes for selected services

Primary CPT	Secondary CPT	Svc	Description	Pre/Post work primary	Added[b] pre/post work secndry	Pre/Post[c] work secndry alone	Ratio[d]
Plastic surgery							
15820	15820	z1	Bilat blephoroplasty, low lid	264	17	264	0.06
15822	15822	z3	Bilat blephoroplasty, upp lid	258	26	258	0.10
19330	19330	z5	Bilat remov mammary implant mat	318	63	318	0.20
Cardiothoracic surgery							
33405	33430	c	AVR w a MVR	1225	139	1270	0.11
33405	33512	e	AVR w CABGX3	1225	106	1045	0.10
32480	39400	q	Mediastinoscopy w tot lobectomy	785	64	245	0.26
Urology							
52601	srv_b	d	TURP w simple bilat orchiectomy	455	39	227	0.17
51596	43830	p	Complete cystectomy w temp gastrostomy	1300	62	417	0.15
54530	54660	y	Radical orchiectomy w insert test prosth	344	20	208	0.09

[a] Pre/post work on the common scale.
[b] Added pre/post work is the pre/post work of the multiple vignette minus the pre/post work of the primary service (unless indicated).
[c] Pre/post work of the secondary service is the work of the secondary service performed alone.
[d] Ratio = Added pre/post work of secondary service divided by pre/post work of secondary service performed alone.

Table 6.8

Comparison of total-service work[a] of primary and secondary codes:
General surgery

Primary CPT	Secondary CPT	Svc	Description	Total work primary	Added[b] total work secndry	Totalc work secndry alone	Ratio[d]
49500	49500	b	Bilat inguinal hernia rpr child	500	177	500	0.35
49500	54152	d	Hernia rpr for child w circumcision	500	124	220	0.56
38745	19120	g	Excis breast mass w axillary dissection	836	211	480	0.44
19240	19120	i	Excis breast mass w mod rad mastectomy	1460	169	480	0.35
44140	44005	o	Ptl colctmy w extensive lysis of adhesns	1695	496	1243	0.40
44140	47100	p	Ptl colctmy w wedge liver bx	1695	305	697	0.44
47120	44140	q	Ptl colctmy w resection liver	1985	665	1695	0.39
44140	44950	r	Ptl colctmy w appendectomy.	1695	218	600	0.36
44800	44950	t	Appendctmy w excis Meckel's divrticulum	1034	154	600	0.26
47605	49560	w	Cholecyst w rpr ventral hernia	1140	403	942	0.43
43324	43830	z	Nissen fundoplication w temp gastrostomy	1547	241	642	0.38
43635	38100	ac	Hemigstrctmy w vagot w total splenectomy	1900	378	1190	0.32
38100	49000	ae	Expl lap, trauma w tot splen	1190	520	891	0.58
srvae	44140	af	Expl lap, trauma w tot splen w pt colctmy	1710	639	1695	0.38[e]

[a] Total-work on the common scale.
[b] Added total-work is the intra-work of the multiple vignette minus the total-work of the primary service (unless indicated).
[c] Total-work of the secondary service is the work of the secondary service performed alone.
[d] Ratio = Added total-service work of secondary service divided by total-service work of secondary service performed alone.
[e] Indicates a multiple procedure involving three or more services.

Table 6.8 (continued)

Comparison of total-service work[a] of primary and secondary codes:
Podiatry

Primary CPT	Secondary CPT	Svc	Description	Total work primary	Added[b] total work secndry	Totalc work secndry alone	Ratio[d]
28270	28270	b	Capsul metars jnt fr contrctr, two jnt	371	74	371	.20
11750	11750	d	Excis nl & nl mtrx, part/comp, two nail	243	81	243	.33
11750[x10]		e	Excis nl & nl mtrx, part/comp, ten nails	243	49[f]	243	.20[e]
28285	28285	g	Hammertoe oper on two toes, same ft	533	156	533	.29
28285	28285	h	Hammertoe oper on two toes, one each ft	533	215	533	.40
28285	11750	i	Hammertoe oper on one toe and excis nl	533	135	243	.55
28285	28270	j	Hammertoe oper one toe and sngl capsltmy	533	119	371	.32
29292	29292	l	Bilateral bunionectomy	757	318	757	.42
29292	28285	m	Bunionectomy, sngl and hammertoe, one toe	757	189	533	.35
28160	28160	p	Hemiphalangectomy, two toes	534	144	534	.27
28080	28080	r	Excis bilat interdig Morton's neuroma	552	251	552	.45
28080[x2]	28140	s	Excis bilat neurma and prtl metatrsctomy	803	157	561	.28[e]
28080	28160	t	Excis sngl nrma & hemiphlngctomy, sng toe	552	236	534	.44
28285	28080	u	Hmrtoe oper 1 toe and excis of sngl nrma	533	280	552	.51
11422	11422	w	Excis two ben les (incl simple closure)	219	84	219	.38

[a] Total-work on the common scale.
[b] Added total-work is the intra-work of the multiple vignette minus the total-work of the primary service (unless indicated).
[c] Total-work of the secondary service is the work of the secondary service performed alone.
[d] Ratio = Added total-service work of secondary service divided by total-service work of secondary service performed alone.
[e] Indicates a multiple procedure involving three or more services.
[f] Computed as the average for each additional service.

Table 6.8 (continued)

Comparison of total-service work[a] of primary and secondary codes:
Oral and maxillofacial surgery

Primary CPT	Secondary CPT	Svc	Description	Total work primary	Added[b] total work secndry	Totalc work secndry alone	Ratio[d]
21470	21422	c	Tx mandib fx & tx pal, max fx, Lefort I	1410	938	1469	0.64
21240	21240	e	Bilat TMJ arthroplasty	1300	696	1300	0.54
21240	21060	g	Unil TMJ arthroplasty w TMJ meniscectomy	1300	515	1346	0.38
21147	21121	j	Lefort I osteotomy w genioplasty	2597	663	746	0.89
21390	21360	m	Tx malar fx & tx orbital floor blowout fx	1332	473	1239	0.38
21247	21255	p	Reconstruct mandib condyle & zygom arch	2025	793	1967	0.40
D7240	D7240	r	Remov 2 impact wisdom teeth (full bony)	284	93	284	0.33
srv_r	D7240	s	Remov 4 impact wisdom teeth (full bony)	377	84[f]	284	0.30[e]
D7110	D7110	u	Extract 2 erupted mandibular teeth	183	38	183	0.21
srv_u	D7110	v	Extract 4 erupted mandibular teeth	221	32	183	0.17[e]
21193	21193	x	Bilat recnstr mnd ram, C/L ost wo bon gft	1426	502	1426	0.35
21194	21194	z	Bilat recnstr mnd ram, C/L ost w bon grft	1741	582	1741	0.33
21195	21195	ab	Bilat recnstr mnd ram, sag spl wo int fix	1979	491	1979	0.25
21196	21196	ad	Bilat recnstr mnd ram, sag spl w int fix	2242	571	2242	0.25
21198	21198	af	Bilat osteotomy, mandib, segmental	1296	423	1296	0.33
21206	21206	ah	Bilat osteotomy, maxilla, segmental	1300	467	1300	0.36

[a] Total-work on the common scale.
[b] Added total-work is the intra-work of the multiple vignette minus the total-work of the primary service (unless indicated).
[c] Total-work of the secondary service is the work of the secondary service performed alone.
[d] Ratio = Added total-service work of secondary service divided by total-service work of secondary service performed alone.
[e] Indicates a multiple procedure involving three or more services.
[f] Computed as the average for each additional service.

Table 6.8 (continued)

Comparison of total-service work[a] of primary and secondary codes:
Neurosurgery

Primary CPT	Secondary CPT	Svc	Description	Total work primary	Added[b] total work secndry	Total[c] work secndry alone	Ratio[d]
63075	22554	c	Anter cerv diskectomy w arthrodesis	1960	604	1800	0.34
22554	20661	e	Arthrodesis w appl cranial halo	1800	432	625	0.69
22625	63047	h	Lumbar lamin w arthrodesis	2027	599	1282	0.47
srv_h	22842	i	Lumbar lamin w arthrodesis w instrmntion	2626	607	1431	0.42[e]
61518	62180	l	Post fossa craniectomy w ventriculocistrn	3205	589	1265	0.47
61512	61512	n	Craniotomy, bilat or mult, supratent meng	2407	1175	2407	0.49
61700	61700	p	Craniotomy, bilat or mult, clip aneurysm	3470	1392	3470	0.40
61700	61711	r	Craniotomy, clip aneurysm w ECIC	3470	1645	3116	0.53
srv_r	61340	t	Crantmy, clip anrysm w ECIC w subtem dcmp	5115	415	1150	0.36[e]
61518	61711	u	Post fossa craniectomy w ECIC	3205	1837	3116	0.59
61500	62141	x	Craniectomy w excis tumor w cranioplasty	1707	591	1242	0.48
64719	64721	aa	Carpal tunnel rpr w ulnar nerve decomprss	425	143	390	0.37
63706	62223	ad	Rpr myelomeningocele w creation V-P shunt	1766	624	1224	0.51
63030	62284	ag	Myelogram foll by lumbar laminectomy	1200	183	155	1.18

[a] Total-work on the common scale.
[b] Added total-work is the intra-work of the multiple vignette minus the total-work of the primary service (unless indicated).
[c] Total-work of the secondary service is the work of the secondary service performed alone.
[d] Ratio = Added total-service work of secondary service divided by total-service work of secondary service performed alone.
[e] Indicates a multiple procedure involving three or more services.

Table 6.8 (continued)

Comparison of total-service work[a] of primary and secondary codes:
Obstetrics and gynecology

Primary CPT	Secondary CPT	Svc	Description	Total work primary	Added[b] total work secndry	Total[c] work secndry alone	Ratio[d]
56300	58120	d	D&C w diagnostic laparoscopy	355	88	238	0.37
56350	58120	e	D&C w diagnostic hysteroscopy	237	108	238	0.45
58150	57240	h	Abdom hystrctmy w anter colporrhaphy	1290	216	535	0.40
58150	57270	k	Abdom hystrctmy w rpr enterocele	1290	250	747	0.33
58150	57260	l	Abdom hystrctmy w comb anter colporrhaphy	1290	318	755	0.42
58260	57260	n	Vag hystrctmy w comb anter colporrhaphy	1130	319	755	0.42
57280	57260	p	Comb anter colporrhaphy w abd colpopexy	830	337	755	0.45
56303	56304	s	Surg laparscpy w fulgrtn w lysis adhesns	565	216	434	0.50
58760	56300	u	Diagnostic laparoscopy w fimbrioplasty	767	200	355	0.56
58140	58740	x	Myomectomy, sngl/mult w lysis adhesns	770	145	523	0.28
57282	57210	aa	Sacrosp lig fixtn, vag w colpoprnrrhphy	818	192	467	0.41
srvaa	57240	ab	Ant colporrhaphy w sacrosp lig fixtn, vag	1010	125	535	0.23[e]

[a] Total-work on the common scale.
[b] Added total-work is the intra-work of the multiple vignette minus the total-work of the primary service (unless indicated).
[c] Total-work of the secondary service is the work of the secondary service performed alone.
[d] Ratio = Added total-service work of secondary service divided by total-service work of secondary service performed alone.
[e] Indicates a multiple procedure involving three or more services.

Table 6.8 (continued)

Comparison of total-service work[a] of primary and secondary codes:
Ophthalmology

Primary CPT	Secondary CPT	Svc	Description	Total work primary	Added[b] total work secndry	Total[c] work secndry alone	Ratio[d]
65730	66984	c	Corneal trnsplnt w cataract remov & IOL	1168	600	980	0.61
65730	66170	e	Corneal trnsplnt w trabeculectomy	1168	616	1123	0.55
65755	66985	i	Corneal trnsplnt w secondary IOL	1189	451	785	0.57
65755	67010	j	Corneal trnsplnt w anter vitrectomy	1189	393	660	0.59
66985	67010	k	Anter vitrectomy w secondary IOL	785	466	660	0.71
srv_j	66985	l	Cornl trnspl w antr vitrctmy w scndry IOL	1582	318	785	0.40[e]
66170	66984	n	Cataract remov & IOL w trabeculectomy	1123	687	980	0.70
67036	66984	o	Cataract remov & IOL w vitrectomy	1125	605	980	0.62
66984	67311	q	Strabismus srg w cataract remov & IOL	980	252	540	0.47
67107	65280	u	Rpr corn lacer w rpr reatt by sclr bk	1390	479	686	0.70
srv_u	66840	v	Rpr corn lac w rpr reat, scl bk w cat xtr	1869	411	721	0.57[e]
66180	66170	y	1st stg glauc drn impl w trabeculectomy	1140	478	1123	0.43
srv_y	67255	z	1st stg glauc drn impl w trab w scl reinf	1618	443	888	0.50[e]
15820	15822	ac	Blepharoplasty, right lowr & uppr eyelids	498	207	446	0.46
15822	15822	ad	Bilat blepharoplasty, upper eyelids	446	237	446	0.53
67107	66761	af	Irid by las srg w rpr ret reatt, sclr bk	1390	247	422	0.59
68700	67935	ai	Suture wound, eyelid w plast rpr canlcli	545	299	489	0.61

[a] Total-work on the common scale.
[b] Added total-work is the intra-work of the multiple vignette minus the total-work of the primary service (unless indicated).
[c] Total-work of the secondary service is the work of the secondary service performed alone.
[d] Ratio = Added total-service work of secondary service divided by total-service work of secondary service performed alone.
[e] Indicates a multiple procedure involving three or more services.

Table 6.8 (continued)

Comparison of total-service work[a] of primary and secondary codes:
Orthopedic surgery

Primary CPT	Secondary CPT	Svc	Description	Total work primary	Added[b] total work secndry	Total[c] work secndry alone	Ratio[d]
28292	28292	b	Bilat bunionectomy, K/M/M	630	287	630	0.46
28292	28285	d	Bunionectomy, K/M/M w hammertoe, one toe	630	144	360	0.40
29888	29881	g	Arthr meniscectomy w ACL reconstruction	1319	302	738	0.41
27447	27447	i	Bilat tot knee replacement	1955	998	1955	0.51
25605	25605	k	ORIF bilat Colles'fracture	540	306	540	0.57
64721	64721	m	Bilat carpal tunnel rpr	390	210	390	0.54
64721	26055	o	Carpal tunnel rpr w tndn shth incis fngr	390	114	255	0.45
27506	27506	q	ORIF R & L femoral shaft fractures	1553	968	1553	0.62
27506	27814	t	ORIF femoral shaft fx & bimall ankle fx	1553	540	979	0.55
srv_q	24515	u	ORIF R & L fem shaft fxs & humer shaft fx	2521	594	1087	0.55[e]
25260	25260	z	Rpr 5 lacr flxr tendns wrist	710	144[f]	710	0.20[e]
srv_z	64856	ab	Rpr 5 lacr flx tendns wrst w rpr medn nrv	1284	737	1237	0.60[e]
64831	26350	ae	Rpr lacr flxr tendn finger w rpr digt nrv	878	305	557	0.55
srvae	26735	ag	Rpr flx tndn fngr w rpr dig nrv w ORIF fx	1183	260	500	0.52[e]

[a] Total-work on the common scale.
[b] Added total-work is the intra-work of the multiple vignette minus the total-work of the primary service (unless indicated).
[c] Total-work of the secondary service is the work of the secondary service performed alone.
[d] Ratio = Added total-service work of secondary service divided by total-service work of secondary service performed alone.
[e] Indicates a multiple procedure involving three or more services.
[f] Computed as the average for each additional service.

Table 6.8 (continued)

Comparison of total-service work[a] of primary and secondary codes:
Otolaryngology

Primary CPT	Secondary CPT	Svc	Description	Total work primary	Added[b] total work secndry	Total[c] work secndry alone	Ratio[d]
30520	30140	c	Septoplasty w submuc resect turbinate	550	141	318	0.44
69436	69436	e	Bilat tympanostomy	173	71	173	0.41
42820	srv_e	g	T & A w bilat tympanostomy	345	78[f]	173	0.45[e]
31600	31525	j	Plan trach w diag larngscpy	695	201	223	0.90
srv_j	31622	l	Plan trach w diag larngscpy w diag bronch	896	146	275	0.53[e]
31622	31525	m	Diag larngscpy w diag bronch	275	162	223	0.73
31360	38724	p	Tot laryngctmy w modif radic neck dissect	1510	679	1319	0.51
srv_j	31395	r	Plan trach w diag laryng w pharnglrngctmy	896	2489	2916	0.85[e]
srv_r	15755	t	Pln trch w diag laryng w pharngl w flap	3385	2220	3050	0.73[e]
31200	31020	w	Anter ethmoidectomy w nas antral windows	464	115	271	0.42
31200	30115	y	Nas polypctmy w anter ethmoidectomy	464	195	423	0.46
41155	31600	aa	Plan trach w glossectomy & rad neck diss	2325	252	695	0.36
srvaa	15732	ac	Pln trch w glssctmy & rad nck w musc flap	2577	819	1469	0.56[e]
42145	30520	ae	Palatphrngplsty w septoplasty	698	355	550	0.64
srvae	30140	af	Palatphrng w septplsty w resect nas turb	1053	128	318	0.40[e]

[a] Total-work on the common scale.
[b] Added total-work is the intra-work of the multiple vignette minus the total-work of the primary service (unless indicated).
[c] Total-work of the secondary service is the work of the secondary service performed alone.
[d] Ratio = Added total-service work of secondary service divided by total-service work of secondary service performed alone.
[e] Indicates a multiple procedure involving three or more services.
[f] Computed as the average for each additional service.

Table 6.8 (continued)

Comparison of total-service work[a] of primary and secondary codes:
Plastic surgery

Primary CPT	Secondary CPT	Svc	Description	Total work primary	Added[b] total work secndry	Total[c] work secndry alone	Ratio[d]
15820	15820	z1	Bilat blephoroplasty, low lid	498	156	498	0.31
15821	15821	z2	Bilat blephoroplasty, low lid w fat pad	566	166	566	0.29
15822	15822	z3	Bilat blephoroplasty, upp lid	446	167	446	0.37
19328	19328	z4	Bilat remov intact mammary implant	513	182	513	0.35
19330	19330	z5	Bilat remov mammary implant mat	695	217	695	0.31

[a] Total-work on the common scale.
[b] Added total-work is the intra-work of the multiple vignette minus the total-work of the primary service (unless indicated).
[c] Total-work of the secondary service is the work of the secondary service performed alone.
[d] Ratio = Added total-service work of secondary service divided by total-service work of secondary service performed alone.

Note: Results for plastic surgery are from phase III study.

Table 6.8 (continued)

Comparison of total-service work[a] of primary and secondary codes:
Cardiothoracic surgery

Primary CPT	Secondary CPT	Svc	Description	Total work primary	Added[b] total work secndry	Total[c] work secndry alone	Ratio[d]
33405	33430	c	AVR w a MVR	2825	1228	2920	0.42
33405	33512	e	AVR w CABGX3	2825	1003	2625	0.38
33430	33512	f	MVR w CABGX3	2920	1090	2625	0.42
33512	33425	h	Mitral valve rpr w CABGX3	2625	1374	2540	0.54
39400	31622	k	Diagn bronch w mediastinoscopy	510	164	275	0.60
32100	31622	m	Diagn bronch w major thoracotomy	1000	207	275	0.75
32100	39400	n	Mediastinoscopy w major thoracotomy	1000	315	510	0.62
32480	31622	p	Diagn bronchoscopy w tot lobectomy	1730	176	275	0.64
32480	39400	q	Mediastinoscopy w tot lobectomy	1730	301	510	0.59
32440	31622	s	Diagn w tot pneumonectomy	1900	223	275	0.81
33512	33212	u	CABGX3 w insert/repl pcmkr or AICD	2625	349	612	0.57
33512	35301	w	Carotid endarterectomy w CABGX3	2625	966	1610	0.60
35556	35355	z	Iliofemoral endartrctmy w fem-pop bypass	1592	786	1467	0.54

[a] Total-work on the common scale.
[b] Added total-work is the intra-work of the multiple vignette minus the total-work of the primary service (unless indicated).
[c] Total-work of the secondary service is the work of the secondary service performed alone.
[d] Ratio = Added total-service work of secondary service divided by total-service work of secondary service performed alone.

Table 6.8 (continued)

Comparison of total-service work[a] of primary and secondary codes:
Urology

Primary CPT	Secondary CPT	Svc	Description	Total work primary	Added[b] total work secndry	Total[c] work secndry alone	Ratio[d]
54520	54520	b	Simple bilat orchiectomy	490	162	490	0.33
52601	srv_b	d	TURP w simple bilat orchiectomy	1145	376	652	0.58
52601	49505	g	TURP w inguinal hernia rpr, over age 5	1145	339	612	0.55
52601	52317	h	TURP w simple litholapaxy	1145	430	619	0.70
54640	54640	j	Bilat orchiopexy	650	363	650	0.56
50590	52332	m	Lithotripsy w cystourethroscopy	955	224	280	0.80
51596	43830	p	Complete cystectomy w temp gastrostomy	3600	232	642	0.36
50080	50040	s	Nephrstlthtmy/pyelstlthtmy w nephrostomy	1389	450	1254	0.36
51845	51040	v	Cystostomy w an abdom-vag vesic neck susp	940	207	449	0.46
54530	54660	y	Radical orchiectomy w insert test prosth	794	215	503	0.43
52000	51726	ab	Cystourethroscopy w complex cystometrogrm	200	95	137	0.70
51741	51726	af	Complex cystometrgrm w complex uroflwmtry	162	82	137	0.60
51795	51772	ag	UPP w AP	192	89	159	0.56
srvag	51726	ah	Complex cystometrogrm w UPP w AP	281	54	137	0.39[e]
srvaf	51795	ai	Cmplx cystmtrgrm w a cmplx uroflowm w AP	244	94	192	0.49

[a] Total-work on the common scale.
[b] Added total-work is the intra-work of the multiple vignette minus the total-work of the primary service (unless indicated).
[c] Total-work of the secondary service is the work of the secondary service performed alone.
[d] Ratio = Added total-service work of secondary service divided by total-service work of secondary service performed alone.
[e] Indicates a multiple procedure involving three or more services.

Table 6.9

Multiple procedures, two services --
ratio of the added work and time of the second procedure to
the work and time of the second procedure when performed alone:
summary across all services

Multiple service type	Ratio* Mean	Median	Std dev	Min	Max
All Services (127)					
Intra time	0.78	0.77	0.24	0.24	1.68
Intra work	0.76	0.75	0.17	0.41	1.25
Prepost work	0.21	0.17	0.19	0.02	1.06
Total work	0.48	0.45	0.15	0.20	1.18

*Ratio of the added work or time of the second multiple procedure to the work or time of that procedure when performed alone.

Table 6.10

Multiple procedures: Ratio of the added total work of the second procedure to the total work of the second procedure when performed alone, summary by type of multiple service

Multiple service type	N	Ratio Mean	Median	Standard deviation	Signif* test
All Services	127	0.48	0.45	0.15	--
Bilateral	34	0.39	0.36	0.11	t= 4.61[a]
Other Multiple	93	0.52	0.48	0.15	
Incision					F=19.09[a]
Same	58	0.47	0.44	0.12	
Different	53	0.44	0.40	0.12	
Other[c]	16	0.67	0.63	0.21	
Clinical Group					F= 3.17[a]
Cmplx Skin/PlSrg	6	0.33	0.33	0.03	
Othr Skin Procs	2	0.36	0.36	0.04	
Musclskltl Procs	19	0.43	0.44	0.11	
Open Chest Procs	12	0.57	0.58	0.13	
Open Abdmnl Prcs	7	0.36	0.36	0.06	
Oth Abdmnl Procs	5	0.46	0.43	0.10	
Urinry Trct Procs	11	0.54	0.56	0.14	
Fem Repr Sys Prcs	8	0.41	0.42	0.08	
Skull/brain Procs	6	0.49	0.48	0.06	
Spinal Procs	5	0.64	0.51	0.33	
Eye Procs	14	0.58	0.59	0.09	
Cmplx Th/Jaw Prcs	9	0.42	0.35	0.21	
Oth Th/Jaw Prcs	2	0.27	0.27	0.08	
Sinus/Cartlg Prcs	3	0.44	0.44	0.02	
Head/Neck Procs	5	0.57	0.51	0.21	
Endoscopic Procs	6	0.56	0.55	0.14	
Arthroscpc Procs	3	0.44	0.41	0.08	
Periph Nervs Prcs	4	0.47	0.49	0.08	

* Significance test of the difference between the mean ratio for each service type. For the bilateral versus non-bilateral comparison, we used a t-test. For the remaining compariosns, we employed an F-test.

Key for Table 6.10

Clinical Groupings

Cmplx Skin/PlSrg	Complex skin repairs and other plastic surgery
Othr Skin Procs	Other skin and connective tissue procedures
Musclskltl Procs	Procedures on musculoskeletal system (except jaw and spine procedures and arthroscopic procedures)
Open Chest Procs	Open chest procedures
Open Abdmnl Prcs	Open abdominal procedures (procedures which entail opening the gastrointestinal tract and other procedures with risk of existing contamination of the abdomen)
Oth Abdmnl Procs	Abdominal procedures
Urinry Trct Procs	Procedures on urinary tract
Fem Repr Sys Prcs	Procedures on female reproductive system
Skull/brain Procs	Procedures on skull or brain
Spinal Procs	Procedures on spine
Eye Procs	Procedures on eye and contiguous structures
Cmplx Th/Jaw Prcs	Complex procedures on teeth and jaw
Oth Th/Jaw Prcs	Other teeth and jaw procedures
Sinus/Cartlg Prcs	Procedures on sinuses and cartilage
Head/Neck Procs	Procedurse on head and neck
Endoscopic Procs	Endoscopic procedures (except arthroscopic)
Arthroscpc Procs	Arthroscopic procedures
Periph Nervs Prcs	Procedures on peripheral nerve system

Table 6.11

Multiple procedure, two services--
Regression Results: Clinical factors explaining the variation in the added total work of the second procedure to the total work of the second procedure when performed alone

Dependent Variable: Ratio of Total Work

Variable[a]	Model I Coefficient	Model II Coefficient
Constant	1.252*	0.428*
Dbilat	-0.088*	0.098*
Ddiffincis	0.045	0.055
Doth incis	0.112**	0.227*
%ppwksec	-0.646*	
Worksec	-0.154*	
Dcmplx skin/plsrg	-0.115**	-0.059
Dothr skin procs	-0.113	-0.027
Dopen chest procs	-0.014	0.041
Dopen abdmnl procs	-0.095	-0.077
Doth abdmnl procs	-0.059	0.033
Durinry trct procs	-0.102**	0.041
Dfem repr sys procs	-0.044	-0.018
Dskull/brain procs	-0.016	0.096
Dspinal procs	0.086	0.152**
Deye procs	0.050	0.136*
Dcmplx th/jaw procs	-0.021	0.017
Doth th/jaw procs	-0.240*	-0.206**
Dsinus/cartlg procs	-0.084	0.014
Dhead/neck procs	-0.007	0.080
Dendoscopic procs	-0.133**	-0.041
Darthroscopic procs	-0.077	0.028
Dperiph nervs procs	-0.003	0.057
Adjusted R^2	0.563	0.415
Root of mean squared errors	0.100	0.116
Observations	127	127

* P < .01
** P < .05

[a] Refer to the key for table 6.11 for descriptions of variables

Key for Table 6.11

Variable	Description
Dbilat	Dummy variable equal to 1 for bilateral multiple procedures, equals 0 for all other services
Ddiffincis	Dummy variable equal to 1 for multiple procedures through different incision, equals 0 for all other services
Doth incis	Dummy variable equal to 1 for multiple procedures involvong no incision or a mix of an incisional and non-incisional service. (Estimates for Ddiffincis and Doth incis are relative procedures through the same incision)
%ppwksec	Percent pre-/post- work of the total work of the second procedure when performed alone.
Worksec	Total work of the second procedure when performed alone.
Dcmplx skin/plsrg Dothr skin procs Dopen chest procs Dopen abdmnl procs Doth abdmnl procs Durinry trct procs Dfem repr sys procs Dskull/brain procs Dspinal procs Deye procs Dcmplx th/jaw procs	Clinical dummy variables describing the anatomy and surgical procedure involved for the multiple. Equal to 1 if the procedure is in a clinical grouping 0 for all other services. (musculoskeletal procedures dummy was ommitted for the regressions. As a result, the remaining clinical group variable parameters are measured relative to these procedures.)
Doth th/jaw procs Dsinus/cartlg procs Dhead/neck procs Dendoscopic procs Darthroscopic procs Dperiph nervs procs	See Key for Table 6.10 for a description of the clinical groupings.

Table 6.12

Comparison of total-service work[a] of primary and secondary codes: secondary codes included in more than one multiple procedures

Sp	Prmry CPT	Secdry CPT	Svc	Description	Total work primary	Added[b] total work secndry	Total[c] work secndry alone	Ratio[d]
gs	44140	44950	r	Ptl colctmy w appendectomy.	1695	218	600	0.36
gs	44800	44950	t	Appendctmy w excis Meckel's divrticulum	1034	154	600	0.26
gs	38745	19120	g	Excis breast mass w axillary dissection	836	211	480	0.44
gs	19240	19120	i	Excis breast mass w mod rad mastectomy	1460	169	480	0.35
po	28270	28270	b	Capsul metars jnt fr contrctr, two jnt	371	74	371	0.20
po	28285	28270	j	Hammertoe oper one toe and sngl capsltmy	533	119	371	0.32
po	28285	28285	g	Hammertoe oper on two toes, same ft	533	156	533	0.29
po	28285	28285	h	Hammertoe oper on two toes, one each ft	533	215	533	0.40
po	29292	28285	m	Bunionectomy, sngl and hammertoe, one toe	757	189	533	0.35
or	28292	28285	d	Bunionectomy, K/M/M w hammertoe, one toe	630	144	360	0.40
po	11750	11750	d	Excis nl & nl mtrx, part/comp, two nail	243	81	243	0.33
po	28285	11750	i	Hammertoe oper on one toe and excis nl	533	135	243	0.55
po	28160	28160	p	Hemiphalangectomy, two toes	534	144	534	0.27
po	28080	28160	t	Excis sngl nrma & hemiphlngctomy, sng toe	552	236	534	0.44
po	28080	28080	r	Excis bilat interdig Morton's neuroma	552	251	552	0.45
po	28285	28080	u	Hmrtoe oper 1 toe and excis of sngl nrma	533	280	552	0.51
ns	61700	61711	r	Craniotomy, clip aneurysm w ECIC	3470	1645	3116	0.53
ns	61518	61711	u	Post fossa craniectomy w ECIC	3205	1837	3116	0.59

Table 6.12 (continued)

Comparison of total-service work[a] of primary and secondary codes: secondary codes included in more than one multiple procedures.

Sp	Prmry CPT	Secdry CPT	Svc	Description	Total work primary	Added[b] total work secndry	Total[c] work secndry alone	Ratio[d]
ob	58150	57260	l	Abdom hystrctmy w comb anter colporrhaphy	1290	318	755	0.42
ob	58260	57260	n	Vag hystrctmy w comb anter colporrhaphy	1130	319	755	0.42
ob	57280	57260	p	Comb anter colporrhaphy w abd colpopexy	830	337	755	0.45
ob	56300	58120	d	D&C w diagnostic laparoscopy	355	88	238	0.37
ob	56350	58120	e	D&C w diagnostic hysteroscopy	237	108	238	0.45
op	65755	67010	j	Corneal trnsplnt w anter vitrectomy	1189	393	660	0.59
op	66985	67010	k	Anter vitrectomy w secondary IOL	785	466	660	0.71
op	66170	66984	n	Cataract remov & IOL w trabeculectomy	1123	687	980	0.70
op	67036	66984	o	Cataract remov & IOL w vitrectomy	1125	605	980	0.62
op	65730	66984	c	Corneal trnsplnt w cataract remov & IOL	1168	600	980	0.61
op	66180	66170	y	1st stg glauc drn impl w trabeculectomy	1140	478	1123	0.43
op	65730	66170	e	Corneal trnsplnt w trabeculectomy	1168	616	1123	0.55
ot	31600	31525	j	Plan trach w diag larngscpy	695	201	223	0.90
ot	31622	31525	m	Diag larngscpy w diag bronch	275	162	223	0.73
ts	39400	31622	k	Diagn bronch w mediastinoscopy	510	164	275	0.60
ts	32100	31622	m	Diagn bronch w major thoracotomy	1000	207	275	0.75
ts	32480	31622	p	Diagn bronchoscopy w tot lobectomy	1730	176	275	0.64
ts	32440	31622	s	Diagn w tot pneumonectomy	1900	223	275	0.81

Table 6.12 (continued)

Comparison of total-service work[a] of primary and secondary codes: secondary codes included in more than one multiple procedures.

Sp	Prmry CPT	Secdry CPT	Svc	Description	Total work primary	Added[b] total work secndry	Total[c] work secndry alone	Ratio[d]
ts	32100	39400	n	Mediastinoscopy w major thoracotomy	1000	315	510	0.62
ts	32480	39400	q	Mediastinoscopy w tot lobectomy	1730	301	510	0.59
ts	33405	33512	e	AVR w CABGX3	2825	1003	2625	0.38
ts	33430	33512	f	MVR w CABGX3	2920	1090	2625	0.42
ur	52000	51726	ab	Cystourethroscopy w complex cystometrogrm	200	95	137	0.70
ur	51741	51726	af	Complex cystometrgrm w complex uroflwmtry	162	82	137	0.60
ns	64719	64721	aa	Carpal tunnel rpr w ulnar nerve decomprss	425	143	390	0.37
or	64721	64721	m	Bilat carpal tunnel rpr	390	210	390	0.54
op	15820	15822	ac	Blepharoplasty, right lowr & uppr eyelids	498	207	446	0.46
ps	15822	15822	z3	Bilat blephoroplasty, upp lid	446	167	446	0.37

[a] Total-work on the common scale.
[b] Added total-work is the intra-work of the multiple vignette minus the total-work of the primary service (unless indicated).
[c] Total-work of the secondary service is the work of the secondary service performed alone.
[d] Ratio = Added total-service work of secondary service divided by total-service work of secondary service performed alone.

Table 6.13

Multiple procedures, three services --
ratio of the added work and time of the third procedure to
the work and time of the third procedure when performed alone:
summary across all services where added work can be computed

Multiple service type	Ratio* Mean	Median	Std dev	Min	Max
All Services (14)					
Intra time	0.64	0.61	0.16	0.30	0.88
Intra work	0.67	0.68	0.13	0.36	0.87
Pre-/post- work	0.15	0.10	0.12	0.03	0.39
Total work	0.45	0.46	0.11	0.23	0.60

*Ratio of the added work or time of the third multiple procedure to the work or time of that procedure when performed alone.

Note: The number of services included in comparison is in parentheses.

Table 6.14
Multiple services involving three or more procedures:
Comparison with payment under the MFS

Sp	Svc	CPT-4 codes	Descriptor	Total work: Current study	Total work: MFS93*	Ratio
gs	af	44140 38100 49000	Expl lap, trauma w tot splen w pt colctmy	2349	2514	0.93
ns	ah	22554 63001 22840 12035 22820 20660 62284	Mult trauma pt, neck fx, decmpr spn, fuse	4000	3085	1.30
ns	i	22625 22842 63047	Lumbar lamin w arthrodesis w instrmntion	3233	3009	1.07[a]
ns	t	61700 61711 61340	Crantmy, clip anrysm w ECIC w subtem dcmp	5530	5464	1.01[a]
ob	ab	57282 57240 57210	Ant colporrhaphy w sacrosp lig fixtn, vag	1135	1186	0.96[a]
op	l	65755 66985 67010	Cornl trnspl w antr vitrctmy w scndry IOL	1900	1807	1.05[a]
op	v	67107 66840 65280	Rpr corn lac w rpr reat, scl bk w cat xtr	2280	1939	1.18[a]
op	z	66180 66170 67255	1st stg glauc drn impl w trab w scl reinf	2061	2024	1.02[a]
or	ab	64856 25260[x5]	Rpr 5 lacr flx tendns wrst w rpr medn nrv	2021	2363	0.86[a]
or	ag	26350 26735 64830	Rpr flx tndn fngr w rpr dig nrv w ORIF fx	1443	933	1.55[a]
or	ai	27130 27507 27049	Rad res neopl hip w tot hip repl w allogr	3561	2803	1.27[a]
or	u	27506 27506 24515	ORIF R & L fem shaft fxs & humer shaft fx	3115	2644	1.18[a]
or	z	25260[x5]	Rpr 5 lacr flxr tendns wrist	1284	1638	0.78[a]
ot	ac	41155 15732 31600	Pln trch w glssctmy & rad nck w musc flap	3396	3014	1.13
ot	af	42145 30520 30140	Palatphrng w septplsty w resect nas turb	1181	1056	1.12[a]
ot	g	42820 69436 69436	T & A w bilat tympanostomy	501	500	1.00
ot	l	31600 31622 31525	Plan trach w diag larngscpy w diag bronch	1042	564	1.85[a]
ot	r	31395 31600 31525	Plan trach w diag laryng w pharnglrngctmy	3385	2845	1.19[a]
ot	t	15755 31395 31600 31525	Pln trch w diag laryng w pharngl w flap	5605	4268	1.31
po	e	11750[x10]	Excis nail/nail matrx, part/comp, 10 nails	719	578	1.24
po	s	28140 28080 28080	Excis bilat neuroma & prtl metatrsctmy	960	878	1.09[a]
ur	ah	51726 51772 51795	Complex cystometrogrm w UPP w AP	335	388	0.86[a]
ur	ai	51726 51741 51795	Cmplx cystmtrgrm w a cmplx uroflowm w AP	338	286	1.18[a]
ur	d	52601 54520 54520	TURP w simple bilat orchiectomy	1521	1510	1.01

*The MFS93 value was computed using the work values in the 1993 Medicare Fee Schedule (MFS) and the MFS policy for multiple surgery. The MFS policy reimburses 100% of the work of the primary service, 50% of the work of the second service, and 25% of the work of all subsequent procedures.
[a] Multiple service included in the analysis summarized in table 6.13.

Chapter 7

Summary, Results, and Discussion

7.1 Introduction

In response to growing public discontent, Congress passed sweeping legislation in 1989 to reform the system that Medicare used to pay for physicians' services. On January 1, 1992, the Health Care Financing Administration (HCFA) implemented the legislation. The cornerstone of payment reform is the Medicare Fee Schedule (MFS) based on the resource-based relative value scale (RBRVS).

The RBRVS was developed by a team of Harvard researchers over a seven-year period that has encompassed four phases of investigation. In the first two phases, we developed the theory and concepts behind the RBRVS, basic methods of measurement, and approaches to data collection.[1,2] Using these methods, we estimated the RBRVs for more than 460 CPT codes in the first two phases. Numerous reviews of the methods, data, and results of the study found that, in general, the RBRVS could be developed, that a common relative value scale could be applied across all specialties, and that the relative values derived were valid and reliable.

Much remained to be done following the second phase in order to construct a complete RBRVS for the fee schedule. In 1990, HCFA funded a third phase of the RBRVS study that was to accomplish the following: expand the study's coverage of specialties and services; refine methods and data; and, review and validate work values for a large number of services.[3] In addition, we were to provide technical support to HCFA and the American Medical Association (AMA) in the development of a new

coding structure for evaluation and management (E/M) services. We accomplished these objectives in phase III.

7.2 Scope of Work for Medicare Fee Schedule Refinement

At the end of phase III of the RBRVS study, there were several areas in which the MFS required improvement and refinement. While HCFA had developed a process, using medical directors of major insurance carriers (CMDs) to review, revise, and update many of the work values, there remained questions that required additional research.

The current study was divided into four distinct tasks with specific objectives for each. In our first task, we examined the work of services provided by limited license (LLP) and non-physician (NPP) practitioners. As part of this contract, we studied the work of E/M services provided by two LLPs (optometry and podiatry) and one NPP (clinical psychology). There were two major parts to this task; first, the professions of optometry and podiatry had requested specialty-specific vignettes to serve as examples in CPT for the E/M services they provide. We validated and aligned these vignettes on the scale of work common to all specialties. For clinical psychology, we compared the work of psychiatry and clinical psychology for services they both provided, and more important, established work values for psychological testing and assessment codes.

As part of the ongoing process of maintaining the fee schedule, HCFA chose a set of procedures and visits as a

"reference set." These are benchmarks to be used by specialties when introducing new codes or when requesting changes in the work values of existing ones. The reference procedures both anchor the scale and serve to define its range. Thus it is important that the work values for these procedures be as accurate and reliable as possible.

In Task II, we developed and validated a detailed data set on service time for the reference set. There were three specific accomplishments in this task: first, we established, in concert with HCFA, a reference set that expanded upon the initial HCFA list, second, we provided detailed time data for these services assembled both from our data bases and new surveys of the RBRVS Assessment panels. Third, we validated these estimates using objective data, subjective estimates from other studies, and a systematic review process using the RBRVS assessment panelists.

When the Medicare Fee Schedule was published at the end of 1991, there were approximately 220 procedures that were still listed as being paid "by report," i.e. based upon the information provided by the surgeon performing the procedure. According to HCFA these codes fell into two categories: 1) procedures at the high end of the work scale, with low Medicare frequencies, performed on patients with serious and complex medical problems and 2) other procedures characterized by low Medicare frequency, for which HCFA felt there was insufficient information to produce relative values.

In Task III, we assigned values or validated previously estimated work values for 179 of these by report codes. Some of these codes had been assigned relative values in phase III after the publication of the MFS. Others had been studied earlier but not included in the MFS until HCFA had subjected them to further analysis. We validated the values obtained in phase III using a review process involving the RBRVS Assessment Panels. Further, for 34 services provided by oral-maxillofacial surgeons, new estimates were required. We surveyed oral and maxillofacial surgeons about the work and time required for the newly studied services.

For Task IV, we were asked to collect data and make recommendations about valuing the work of multiple and/or bilateral procedures. Under the MFS, there is a general payment rule for these procedures -- 100 percent for the highest priced (primary) procedure, 50 percent for the second, 25 percent for all subsequent services. The rule does not discriminate between bilateral and non-bilateral multiple procedures; procedures requiring only one incision, those requiring more than one, and those that require no incision; or procedures of differing clinical characteristics. For this task we were asked to determine whether the existing rule was a reasonable reflection of the work of additional procedures and to recommend changes if required.

Using methods developed in phase III and the RBRVS Assessment Panels for ten specialties, we estimated the work and

time for 146 multiple services. We measured the economies of scope involved in performing each service and analyzed the results to determine any systematic patterns across services. Based on our findings, we made payment policy recommendations for these procedures.

The remainder of this chapter is organized into three sections. The next two sections provide a summary of the methods and data that were used to carry out the analysis described above. The following section presents the results of this study. The final section includes our comments on future research needs.

7.3 Methods

In carrying out the work on the four tasks described above, we relied on the methods developed, tested, and refined over the three previous phases of the RBRVS study. The methods are based on the theoretical framework of the RBRVS that defines the work of a service as comprised of the time spent during, before and after the service, and the intensity of that time.

The collection, analysis and interpretation of data requires medical and professional expertise. As before, we obtained the neccessary clinical input from formal consultative panels. These included the technical consulting groups (TCGs) and the RBRVS Assessment Panels. The TCGs performed several essential functions; they advised us about specific features of each specialty and participated in the assessment panel process. The

assessment panelists were a primary source of data for the current study and many reviewed the data on time and work.

The technical aspects of the study reflected those employed in the earlier phases of the RBRVS. We used surveys of physicians to obtain measurements of service work and time. For our study of clinical psychology, podiatry and optometry, we continued to use magnitude estimation and a single reference service to rate intra-service work, as in phases I and II. We did this because these professions had not been studied previously and an established scale was not yet available. For the remaining specialties, we modified this approach by providing multiple reference services. We instructed the physicians to consider these reference work values as fixed and use them as a context for assigning values to the service in question.

We used different methods to estimate the work before and after evaluation and management (E/M) and invasive services. For E/M services, we asked the physicians to rate the intra- and then the total work of the service.[2] Pre- and post-service work is the difference between these two estimates. For surgical procedures, we first obtained time estimates for each of the five components of the pre- and post-operative service: pre-service time before O.R. entry; immediate pre- and post-service time; later same day post-service time; hospital post-operative time; and office post-operative visit time. We then used these times and methods developed during phase III to compute pre- and post-

service work. We summed intra- and pre- and post-service work to determine total work.

7.4 Data

Development of the RBRVS required that we collect primary data from practicing physicians and other professionals. They were asked to rate intra-service and pre- and post-service time and work for services in their specialty and to provide data on their practices. These data were collected in two ways: surveying a random nationwide sample of clinical psychologists and surveying a small group of experts for all other specialties or professions included in this study except clinical psychologists. All data for these tasks were collected by mail.

With the exception of our study of clinical psychology, data collection followed the model developed in phase III where we relied on RBRVS Assessment Panels comprised of 15 to 20 experts in each specialty. After experimenting with various approaches to using small groups of physicians to measure work, this approach was the method that best approximated the results of the large national surveys.[2,4]

7.5 Major Findings

7.5.1 Task I: Work of Non-Physician and Limited License Professions

We studied the work of two limited license and one non-physician professions: optometry, podiatry, and clinical

psychology. Working with each of these professions, we created vignettes for E/M services provided by the professions and measured the work and time required to perform the services in the vignettes. In consultation with the TCGs, we selected illustrative vignettes for the more common E/M services. For clinical psychology, we also studied the work of psychological or neurological assessments.

We found that it was possible to compare optometry, podiatry, and clinical psychology with the medical specialties providing the same or similar services and assign vignettes to E/M codes for these professions. We used different techniques for each profession. For optometry, we found that for all the services compared, the optometrists take less time than ophthalmologists to perform them. Based on these data, we could not assume comparability of work for these services. As a result, we assigned optometry vignettes to E/M codes based on their intra-service time.

We concluded that podiatry can be placed on the common scale of work using the services common to the podiatry survey and earlier surveys for orthopedic surgery and general surgery. We used the estimates of work for podiatry to assign vignettes to CPT codes.

For clinical psychology, we found the times and relative ratings of work are in agreement with those of psychiatrists for the diagnostic and therapeutic services they both provide. This

finding allowed us to place the work of the psychological assessment services onto the common scale.

We studied the work of 16 assessment services in clinical psychology. We tested different hypotheses and determined the following:

1. There is a difference in the intensity (work per unit of time) between the intra-service and pre- and post-service work of assessments. We found the intra-service intensity to be 20 to 60 percent greater;
2. The pre- and post-service work of assessments represents a larger portion of total work than for psychotherapy services; and,
3. The primary assessments service - 90830 - should not be subdivided into separate codes, as hypothesized by the TCG. Analysis of the results for four subcategories within this code showed no significant differences in work.

We found the work per hour (i.e., intensity) for assessment services was 40 percent less on average than that for psychotherapy. The TCG argued that the work per hour of assessments was at least as great or up to 140 percent of that for psychotherapy. Based upon our examination, analysis, and qualitative review of the data on assessments and consultation with additional experts, we agree with the members of TCG that the work per hour of assessments we obtained was too low. Although we used methods that were developed and validated over

many years and for many specialties, they appear to be not well-suited for measuring the work per hour of psychological assessment services. Based on the assumptions outlined in Chapter 3, we recommended appropriate values for these services that reflect the consensus that the work per hour of these services is greater than that of therapy.

7.5.2 Task II: A Data Set for Validating the Reference Services

In Task II, we developed a comprehensive list of reference services, collected data with detailed time information, and validated the time estimates using both subjective reviews and comparisons with other data. Finally, we prepared a fact sheet that summarized the relevant information for each reference service.

The first step in this task was to develop a comprehensive list of services, by specialty, that would cover the range of work and would include E/M, invasive, pathology, and imaging and testing services. We developed a list of 15 to 35 reference services for each of eighteen specialties, selecting the more commonly performed services.

We constructed a data file with detailed time information on the surgical reference services. These data included estimates of six components of surgical time: pre-service time before entry into the operating room, immediate pre- and post-operative time, intra-service time, other same-day post-operative time, and hospital and office post-operative time. For each component, we

provided data on the mean value, the standard error, the source of the information, and the number of respondents. Since we had not previously collected information on the immediate-pre-operative and post-operative period, we collected additional data using a survey of the RBRVS Assessment Panels.

We validated the estimates of time for the surgical reference services using objective data and subjective estimates from other studies. In general, comparisons with other data suggest that the surgical time estimates had validity. Our intra-service ("skin-to-skin") times were compared to hospital operating room logs, and, in general, fell within the range. Further, our time values were similar to those estimated by other studies. We compared our data on post-operative hospital visits with length of stay information. We also used data from NAMCS and from a survey conducted by PPRC to validate information on post-operative visits.

We conducted a systematic review of the surgical reference data set using the assessment panelists. In general, the assessment panelists agreed with the values we had obtained.

For non-surgical services, we assembled a detailed data file including estimates of intra-, pre- and post-, and total service times. We included means, standard errors, the source of information, and the number of respondents.

7.5.3 Task III: Developing Work Values for "By Report" Procedures

In the MFS published in November 1991, relative values were not provided for approximately 250 surgical CPT codes. Of these codes, approximately 60 are designated as "unlisted" and ending in "99" (occasionally in "49" or "89") that are set aside for unusual or extremely variable procedures and have traditionally been paid by special report. We did not study these services and suggest they continue to be paid by report.

We produced work values for 179 of the remaining services. For the 145 services studied previously in phase III, we developed a review process and asked the assessment panelists to evaluate the existing work estimates. Overall, the panelists showed a high degree of agreement with the phase III values. We revised the total work of eight services based on their recommendations. For the 34 newly studied by report services, we asked the panelists to rate the work of each service and placed them on the scale common to all specialties.

There were three general findings from this task. First, we found the work values we developed in phase III for the by report codes to be reliable. For almost 90 percent of these services, at least half of the respondents agreed with the phase III estimate. Further, when revisions were suggested, these changes were small.

Second, many of the by report codes are performed infrequently. When we initially studied these services during

phase III, we found that in many cases, less than five respondents felt qualified to estimate the work and time involved. We observed a similar result in the current investigation. For those who rated these services, we found good agreement. The work values we developed can be used as the basis for the MFS or as a guideline in evaluating claims submitted by physicians. However, given their frequency of performance, the continued payment for these services on a by report basis is worthy of consideration.

Finally, the methods we developed in phase III, involving a small group of physicians, magnitude estimation and a reference list, can continue to be employed in measuring the work of new services. We found our panelists could judge the work and time of the previously unstudied services. Their estimates showed good agreement, as measured by the standard errors of their mean ratings and the work values produced appeared to have face validity.

7.5.4 Task IV: The Work of Multiple and Bilateral Procedures

Multiple procedures are defined as occurring when a surgeon performs more than one procedure on the same patient on the same day. In our investigation of multiple procedures, we addressed three issues:

1. Economies of scope - What are the differences in work and time between performing a service alone or in addition to another service;

2. Systematic variations - Is there a systematic relationship between the work of multiple procedures and the clinical characteristics of the services involved; and

3. Uniform payment policy - Can the findings about multiple procedures studied be generalized to all services performed in this way? Can a uniform payment policy be developed that accurately reflects the additional work, and how will this compare to current payment rules?

We selected a total of 146 multiple procedures for study, including 122 multiples involving two services and 24 involving three or more procedures. Using methods developed in phase III and the RBRVS Assessment Panels for ten specialties, we estimated the work and time involved for each these services.

We found economies of scope in performing multiple procedures. For two service multiples, the marginal intra-service work and time of the second procedure is about 75 percent of that required to perform that procedure alone. For pre- and post-service work, this amount was 20 percent, suggesting significantly greater economies. We found economies of scope for total work to be, on average, 48 percent, an amount consistent with the current MFS payment policy.

We found some differences in economies of scope across multiple procedures. For bilateral procedures, the total work of the added service was, on average, 40 percent of the total work of the service performed individually, while for other multiples, this amount was closer to 50 percent. Since greater economies

were shown for pre- and post- than intra-service work, we also found greater economies in total work for those services where pre- and post- comprised a larger portion of the total. Finally, we found some differences across clinical service groupings.

Economies of scope also exist for multiple procedures involving three or more services. We found the added total-service work for the third procedure was about 45 percent of that of the third procedure performed alone. This amount is greater than the 25 percent value assumed for the current MFS policy.

Based on these findings, we suggested two payment policy options be considered for the second service in a multiple procedure. The first option is to continue the current rule of 100 percent of full payment for the primary procedure and 50 percent payment for the second procedure. The second option would decrease the payment factor to 40 percent for the second service for bilateral procedures. Finally, we recommend the current MFS policy for the third and subsequent procedures in a multiple be reconsidered.

7.6 Remaining Problems and Research

The RBRVS-based MFS is now in its second year and continues to undergo refinements. As with any new program, there are areas in which additional research is required to assure that the RBRVS remains a solid foundation for paying physician services.

7.6.1 Review, Refinement, and Update Processes

A systematic and open process for reviewing, refining, and updating the RBRVS is required. There are bound to be disagreements and inaccuracies in the values of some services, requiring review by physicians to assess their validity. Furthermore, medical technology, and ways of organizing and providing services change rapidly. If the RBRVS is to reflect input costs accurately, it must be responsive to these changes.

At this time, the efforts to update, review, and refine the MFS have involved two processes. HCFA has assembled a panel of carrier medical directors (CMDs) of major insurance carriers who use a formal process to review and revise work values. The CMDs suggested a number of revisions and new values for the 1992 and 1993 MFS. In addition to the CMD process, recommendations for values for new or revised procedures are produced by the AMA RBRVS Update Committee (RUC) process.[5] These recommendations are agreed to by multi-specialty RUC panels and then sent to the CMDs at HCFA.

We examined the revisions, as published in the MFS, in the original work values we produced in phase III of the RBRVS study. Our analysis shows the vast majority of changes (more than 90 percent) have resulted in increases. Although more than half the increases requested by commenters on the MFS have been denied by the HCFA CMD process, the overall trend has been to raise values.

This process would encourage every specialty to push up their work values.*

A systematic process is needed for updating the RBRVS. Such a system should minimize the inflationary tendencies of the current approach, while allowing true inaccuracies in the fee schedule to be remedied. A method similar to the small group review process used in Task III of this study is one possibility. Under this approach, the panelists were presented the current work value and asked to evaluate it relative to those for other services on a reference list. The panelists suggested revisions to the current value, if necessary. The current CMD process also employs a reference list in its deliberations. However, the CMDs are presented with two values to evaluate in making recommendations: the current work value and the value requested by the commenter (usually greater). Such an approach provides a potential bias for obtaining ratings somewhere between the current and requested values.

One element that could improve the current processes to update and revise the RBRVS includes the incorporation of additional data into the assessment of work values. The current processes do not make available a significant amount of information about services for those making evaluations. In most

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*As a result of the budget neutrality restrictions for revisions in the fee schedule, net increases in the work values in the MFS result in a lowering of the overall conversion factor. However, such a mechanism redistributes payments to those specialties receiving increases in work values for their services at the expense of other specialties and services.

cases, only the relative total work values of the services in question, and those of related services, are considered. In Task II of this study, we assembled a detailed time data set for a large number of services. This data should provide a useful input into the update process. Objective estimates of time, such as those from a national data base of hospital operating room logs or average length of hospital stay, by CPT, would also be invaluable.

As payment under an RBRVS evolves and expands to other payors, there will be a need for open and systematic methods of review and modification that are conceptually sound, validated, and resistant to bias and "gaming." It remains a challenge to administer and refine fee schedules in a manner that provides for flexibility while remaining equitable and objective. Many features of the CMD process are useful and should be maintained as part of any refinement approach. These include the use of multi-specialty panels, a reference set for rating work, formal rules for decision-making, and an open and well documented process. The AMA RUC has also developed methodologies that reflect some of these features. Continued development and refinement of such processes is essential to the long term stability of the RBRVS.

7.6.2 Valuing the Work of Limited License or Non-Physician Providers

As currently written, the Medicare Fee Schedule (MFS) compensates limited license practitioners (LLPs) at the same rate as physicians for the same service, while non-physician practitioners (NPPs) will be paid at a fraction of the rate paid to physicians.

There is no simple solution to determine the rate at which LLPs or NPPs should be compensated. Three major areas are of concern; first there is the question of definition. Even if the service is billed using the same CPT code by physicians and LLPs, how can we determine whether the two services are the same or equivalent? There is no accepted definition of "sameness" when a service is provided by two different professions. Should "same" be defined by resource cost, health benefits, patient satisfaction, or the patient's willingness to pay?

The second question is one of measurement. We are not aware of any reliable empirical studies that measure whether a service is the "same" in terms of benefits and patient satisfaction when a medical service is provided by physicians, podiatrists, chiropractors, or clinical psychologists.

The third question is one of policy; if we can show that services are the same, how should providers be compensated? In their discussion of LLPs and NPPs, PPRC makes the case for two different and inconsistent principles. First, there is the principle of "equal pay for equal work," which was applied to optometry and podiatry. The other principle was compensation based on the value of human capital and opportunity cost of

training,* which was applied to clinical psychologists, nurse practioners, etc.[6]

As described above, we compared the work and time of optometry, podiatry, and clinical psychology with the medical specialties providing the same or similar services. For optometry, we found that for all of the services compared, the optometrists take less time than ophthalmologists. There are alternative explanations for these findings which we cannot distinguish at this time with certainty. The MFS reimburses optometrists and ophthalmologists the same for the services we studied. Our findings suggest the work and the services involved may not be the same.

For podiatrists and clinical psychologists, we found the time values were comparable for the same services performed by general and orthopedic surgery and psychiatry. The relative spacing of the work values was also similar. We used this result to assign vignettes to E/M codes for podiatry and develop work values for the psychological assessments on the common scale.

Our results have provided additional information to assess the question how to pay LLPs and NPPs. However, questions still remain. In particular: 1) how should the Medicare program compensate providers with different levels of training; 2) although the time and work for comparable services may be the

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*Interestingly, the PPRC has rejected the human capital and opportunity cost of training arguments for the reimbursement of physician services in the RBRVS. Opportunity costs were incorporated in the original formulation of the RBRVS.

same, is the clinical outcome or patient satisfaction comparable; and 3) what is the impact of payment policies on the cost and volume of services? Increased fees and coverage for LLPs and NPPs may encourage entry into these professions and possibly the number of their services provided.

7.6.3 Practice Costs

Unlike the portion of the fee schedule that compensates physicians for work, it is commonly recognized that the practice-cost portion is not resource-based.[7,8] Practice costs are computed for the MFS by applying specialty-specific practice-cost percentages to estimates of historical physician charges rather than the cost of resources. Since, the historical charges do not accurately reflect the relative resource costs of providing services, neither will the practice-cost components.

Payments for practice costs tend to be disproportionately higher, relative to resource costs, for invasive services. Since surgical procedures historically involved more generous compensation than other services, charge-based allocation favors these services and reimburses more for expenses than is actually spent. For example, the practice cost attributed to a typical office visit is $13, while the physician's practice cost attributed to a 3-vessel coronary artery bypass procedure is almost $1,200. A reasonably informed observer knows that the practice costs of these two services do not differ by 100-fold and that the practice cost of an office visit is more than $13.

This technical flaw in the current law needs to be addressed. Adopting a resource-based practice cost payment method for the MFS would decrease the relative values (and payments) for surgical services and increase them for E/M services.

7.6.4 Principles for Coding Reform

CPT is the most frequently used system to report physician procedures and services under both government and private health insurance programs. The CPT coding system was not originally designed for payment purposes, and it lacks a clear conceptual basis and a set of agreed upon principles for classifying, defining, and coding the large and growing repertoire of physicians' services.

First, services of different specialties are handled inconsistently. Of the approximately 4,500 surgical CPT codes, around 1,300 are devoted to the services of a single specialty (orthopedic surgery); there are 186 codes for procedures of the hand alone. By contrast, there are less than 13 primary codes in neurosurgery for excision of brain tumors, and less than 80 codes for the E/M services used by every specialty. As a result, there may be less variation between codes for orthopedic surgery, where relatively minute disctinctions are made between procedures, than there is within a given code for E/M services or excision of brain tumors.

Second, heterogenity exists within codes; certain codes may include services that vary considerably in the work required.

Aggregation of procedures that vary widely in work under the same code is inconsistent with the resource cost-based approach and contributes to conflict between physicians and payors.

Third, codes for obsolete procedures persist beyond the time that experts, such as members of our TCG panel, regard the services as obsolete.

In changing from a customary, prevailing, and reasonable (CPR) system of payment in which differences in usage between physicians can be accommodated, to a fee schedule in which all physicians will be paid the same for a given service, it is essential that codes be understood clearly and used uniformly by all physicians and carriers. The recent revision of CPT for E/M services is one example of a refinement that promotes consistent use of the coding system and equitable payment. However, further improvements are necessary.

7.6.5 Incorporation of Quality of Care into the RBRVS

A major limitation of the RBRVS is that it considers only the cost of the resource input required to perform a service. Meanwhile, the quality of service varies between physicians. A fair payment system should reflect differences in the quality of a service, particularly when it takes more resources to produce a higher-quality product. Some advances have been made in operationalizing improvements in the quality of care, such as development of practice guidelines and approaches for total quality management. It may eventually be feasible to develop

practical methods that can measure and incorporate quality and appropriateness of care into physician payment.

Endnotes

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Appendix A

RBRVS Bibliography and Recent Articles

Appendices

Appendix Table B.1

Specialty Reference Service Lists Used in Measuring Work:
Magnitude Estimation with Multiple Reference Points

Appendix Table B.1
List of Reference Services:
General Surgery
Harvard RBRVS Study

CPT-4	Description	Service Work Total	Intra
48150	Pancreatectomy, proximal subtotal, with pancreaticoduodenectomy (whipple type procedure), and pancreatic jejunostomy.	3000	1695
35641	Bypass graft, with other than vein, aortoiliac.	2250	1400
35081	Direct repair of aneurysm or excision (partial or total) and graft insertion, with or without patch graft, for aneurysm or occlusive disease, abdominal aorta.	2200	1270
45110	Proctectomy, complete, combined abdominoperineal, with colostomy, one or two stages.	2155	1165
44150	Colectomy, total, abdominal, without proctectomy, with ileostomy or ileoproctostomy.	1890	1065
44140	Colectomy, partial, with anastomosis.	1695	800
35301	Thromboendarterectomy, with or without patch graft, carotid, vertebral, subclavian, by neck incision.	1610	950
60500	Parathyroidectomy or exploration of parathyroid(s), without mediastinal exploration, sternal split or transthoracic approach.	1530	900
19240	Mastectomy, modified radical, including axillary lymph nodes and pectoralis minor muscle, but excluding pectoralis major muscle.	1460	730

Appendix Table B.1
List of Reference Services:
General Surgery
Harvard RBRVS Study

CPT-4	Description	Service Total	Work Intra
47610	Cholecystectomy with exploration of common duct.	1375	850
44120	Enterectomy, resection of small intestine, with anastomosis.	1305	650
58150	Total abdominal hysterectomy (corpus and cervix), with or without removal of tube(s), with or without removal of ovary(s).	1290	630
38100	Total splenectomy.	1190	630
43832	Gastrostomy, permanent, with construction of gastric tube.	1060	545
47600	Cholecystectomy, without cholangiography.	1060	510
27590	Amputation, thigh, through femur, any level.	1015	415
60220	Total thyroid lobectomy, unilateral.	980	625
34101	Embolectomy or thrombectomy, with or without catheter, axillary, brachial, innominate, subclavian artery, by arm incision.	870	450
15100	Split graft, trunk, scalp, arms, legs, hands, and/or feet (except multiple digits), 100 sq cm or less, or each one percent of body area of infants and children.	800	315

Appendix Table B.1
List of Reference Services:
General Surgery
Harvard RBRVS Study

CPT-4	Description	Service Total	Work Intra
36830	Creation of arteriovenous fistula, nonautogenous graft.	775	470
46260	Hemorrhoidectomy, internal and external, complex or extensive, without fistulectomy, without figgurectomy.	665	255
49505	Repair inguinal hernia, age 5 or over.	610	295
44950	Appendectomy.	600	275
19140	Mastectomy for gynecomastia through circumareolar or other incision.	485	210
46934	Destruction of hemorrhoids, any method, internal.	380	210
31625	Bronchoscopy, with biopsy.	335	215
36800	Insertion of cannula for hemodialysis, other purpose, vein to vein.	240	140
99254	Initial inpatient consultation for a new or established patient, level four, approximately 80 minutes.	230	195
12011	Simple repair of superficial wounds of face, ears, eyelids, nose, lips and/or mucous membranes, 2.5 cm or less.	170	90

Appendix Table B.1
List of Reference Services:
General Surgery
Harvard RBRVS Study

CPT-4	Description	Service Total	Work Intra
20220	Biopsy, bone, trocar or needle, superficial (eg, ilium, sternum, spinous process, ribs).	125	75
99232	Subsequent hospital care, per day, for the evaluation and mangement of a patient, level two, approximately 25 minutes.	90	75
99213	Office/outpatient visit for the evaluation and management of an established patient, level three, approximately 15 minutes.	55	40

Appendix Table B.1
List of Reference Services:
Oral & Maxillofacial Surgery
Harvard RBRVS Study

CPT-4	Description	Service Total	Work Intra
21249	Reconstruction of mandible or maxilla, endosteal implant (eg, blade, cylinder), complete.	1700	1140
21470	Open treatment of complicated closed or open mandibular fracture by multiple surgical approaches including internal fixation, interdental fixation, and/or wiring of dentures or splints.	1410	800
21365	Open treatment of closed or open complicated, (eg. multiple fractures), of malar area, including zygomatic arch and malar tripod, with internal skeletal fixation and multiple surgical approaches.	1390	835
21240	Arthroplasty, temporomandibular joint, with or without autograft (includes obtaining graft).	1300	810
21248	Reconstruction of mandible or maxilla, endosteal implant (eg, blade, cylinder), partial.	1100	740
21215	Graft, bone, mandible (includes obtaining graft).	1000	600
21210	Graft, bone, nasal, maxillary or malar areas (includes obtaining graft).	950	570
21462	Open treatment of closed or open mandibular fracture, with interdental fixation.	910	545
21030	Excision of benign tumor or cyst of facial bone other than mandible.	700	420

Appendix Table B.1
List of Reference Services:
Oral & Maxillofacial Surgery
Harvard RBRVS Study

CPT-4	Description	Service Total	Work Intra
21041	Excision of benign cyst or tumor of mandible, complex.	500	300
21110	Application of interdental fixation device for conditions other than fracture or dislocation, includes removal.	500	300
21485	Complicated manipulative treatment of temporo-mandibular dislocation, initial or subsequent.	370	225
99244	Office consultation for a new or establised patient, level four, approximately 60 minutes.	225	160
21040	Excision of benign cyst or tumor of mandible,	200	120
21315	Manipulative treatment, nasal bone fracture, without stabilization.	140	85
99203	Office/outpatient visit for the evaluation and management of a new patient, level three, approximately 30 minutes.	115	80
21480	Uncomplicated treatment of temporomandibular dislocation, initial or subsequent.	60	35
21310	Treatment of closed or open nasal fracture without manipulation.	60	35

Appendix Table B.1
List of Reference Services:
Oral & Maxillofacial Surgery
Harvard RBRVS Study

CPT-4	Description	Service Work Total	Intra
99231	Subsequent hospital care, per day, for the evaluation and management of a patient, level one, approximately 15 minutes.	55	45
99213	Office/outpatient visit for the evaluation and management of an established patient, level three, approximately 15 minutes.	55	40

Appendix Table B.1
List of Reference Services:
Neurosurgery
Harvard RBRVS Study

CPT-4	Description	Service Work Total	Intra
61520	Craniectomy for excision of brain tumor, infratentorial or posterior fossa, cerebellopontine angle tumor.	3805	3100
61700	Surgery of intracranial aneurysm, intracranial approach, carotid circulation.	3460	2430
61518	Craniectomy for excision of brain tumor, infratentorial or posterior fossa, except meningioma, cerebellopontine angle tumor, or midline tumor at base of skull.	3205	2235
61512	Craniectomy, trephination, bone flap craniotomy, for excision of meningioma, supratentorial.	2410	1665
61510	Craniectomy, trephination, bone flap craniotomy, for excision of brain tumor, supratentorial, except meningioma.	2320	1530
22558	Arthrodesis, anterior interbody technique, lumbar, with bone graft.	2195	1555
61312	Craniectomy or craniotomy for evacuation of hematoma, supratentorial, extradural or subdural.	2040	1075
22554	Arthrodesis, anterior interbody technique, cervical below c2, with bone graft.	1800	1050

Appendix Table B.1
List of Reference Services:
Neurosurgery
Harvard RBRVS Study

CPT-4	Description	Service Total	Work Intra
63042	Laminotomy (hemilaminectomy), with decompression of nerve root(s), including partial facetectomy, foraminotomy and/or excision of herniated intervertebral disk, re-exploration, lumbar.	1715	1120
35301	Thromboendarterectomy, with or without patch graft, carotid, vertebral, subclavian, by neck incision.	1610	950
63017	Laminectomy with exploration and/or decompression of spinal cord and/or cauda equina, without facetectomy, foraminotomy or diskectomy, (eg, spinal stenosis), more than 2 vertebral segments, lumbar.	1575	1000
61154	Burr hole(s) with evacuation and/or drainage of hematoma, extradural or subdural.	1355	600
63047	Laminectomy, facetectomy and foraminotomy (unilateral or bilateral with decompression of spinal cord, cauda equina and/or nerve root(s), (eg, spinal or lateral recess stenosis), single vertebral segment, lumbar.	1265	800
63030	Laminotomy (hemilaminectomy), with decompression of nerve root(s), including partial facetectomy, foraminotomy and/or excision of herniated intervertebral disk, one interspace, lumbar.	1200	635

Appendix Table B.1
List of Reference Services:
Neurosurgery
Harvard RBRVS Study

CPT-4	Description	Service Total	Work Intra
63780	Insertion or replacement, subarachnoid or epidural catheter, with reservoir and/or pump for drug infusion, without laminectomy.	615	325
64721	Neuroplasty and/or transposition, median nerve at carpal tunnel.	395	165
99254	Initial inpatient consultation for a new or established patient, level four, approximately 80 minutes.	230	195
64421	Injection, anesthetic agent, intercostal nerves, multiple, regional block.	205	95
99204	Office/outpatient visit for the evaluation and management of a new patient, level four, approximately 45 minutes.	170	115
62284	Injection procedure for myelography and/or computerized axial tomography, spinal (other than C1-C2 and posterior fossa).	155	100
64400	Injection, anesthetic agent, trigeminal nerve, any division or branch.	130	100
62270	Spinal puncture, lumbar, diagnostic.	110	85
99232	Subsequent hospital care, per day, for the evaluation and mangement of a patient, level two, approximately 25 minutes.	90	75

Appendix Table B.1
List of Reference Services:
Neurosurgery
Harvard RBRVS Study

CPT-4	Description	Service Work Total	Intra
99213	Office/outpatient visit for the evaluation and management of an established patient, level three, approximately 15 minutes.	55	40
99231	Subsequent hospital care, per day, for the evaluation and mangement of a patient, level one, approximately 15 minutes.	55	45

Appendix Table B.1
List of Reference Services:
Obstetrics and Gynecology
Harvard RBRVS Study

CPT-4	Description	Service Total	Work Intra
58240	Pelvic exenteration for gynecologic malignancy, with total abdominal hysterectomy or cervicectomy, with or without removal of tubes(s), with or without removal of ovarie(s), with removal of bladder and urethral transplantations, and/or abdominoperineal resection of rectum and colon and colostomy, or any combination thereof.	2860	1520
58210	Radical abdominal hysterectomy, with bilateral total pelvic lymphadenectomy and para-aortic lymph node sampling (biopsy), with or without removal of tube(s), with or without removal of ovarie(s).	2380	1200
58951	Resection of ovarian malignancy with bilateral salpingo-oophorectomy and omentectomy, with total abdominal hysterectomy, pelvic and limited para-aortic lymphadenectomy.	2020	1050
56640	Complete radical vulvectomy with inguinofemoral, iliac, and pelvic lymphadenectomy.	1885	900
58152	Total abdominal hysterectomy (corpus and cervix), with or without removal of tube(s), with or without removal of ovary(s), with colpo-urethrocystopexy (Marshall-Marchetti-Krantz type).	1400	750
58950	Resection of ovarian malignancy with bilateral salpingo-oophorectomy and omentectomy.	1400	750

Appendix Table B.1
List of Reference Services:
Obstetrics and Gynecology
Harvard RBRVS Study

CPT-4	Description	Service Work Total	Intra
58150	Total abdominal hysterectomy (corpus and cervix), with or without removal of tube(s), with or without removal of ovary(s).	1290	600
59410	Vaginal delivery only (with or without episiotomy and/or forceps) including postpartum care.	1215	225
58260	Vaginal hysterectomy.	1130	500
57280	Colpopexy, abdominal approach.	830	370
57260	Combined anteroposterior colporrhaphy.	755	280
58940	Oophorectomy, partial or total, unilateral or bilateral.	650	285
58720	Salpingo-oophorectomy, complete or partial, unilateral or bilateral (separate procedure).	615	280
57240	Anterior colporrhaphy, repair of cystocele with or without repair of urethrocele.	535	195
58120	Dilation and curettage, diagnostic and/or therapeutic (nonobstetrical).	245	80
57520	Conization of cervix, with or without fulguration, with or without dilation and curettage, with or without repair (any method).	340	135

Appendix Table B.1
List of Reference Services:
Obstetrics and Gynecology
Harvard RBRVS Study

CPT-4	Description	Service Work Total	Intra
99254	Initial inpatient consultation for a new or established patient, level four, approximately 80 minutes.	230	195
99205	Comprehensive history, comprehensive examination, and high-complexity medical decision making, problem(s) considered moderate to high severity, about 60 minutes.	230	155
99215	Office/outpatient visit for the evaluation and management of an established patient, level five, approximately 40 minutes.	150	100
56420	Incision and drainage of bartholin's gland abscess.	135	65
57454	Colposcopy (vaginoscopy), with biopsies, or biopsy of the cervix.	125	80
99232	Subsequent hospital care, per day, for the evaluation and mangement of a patient, level two, approximately 25 minutes.	90	75
57500	Biopsy, single or multiple, or local excision of lesion, with or without fulguration (separate procedure).	95	70
58100	Endometrial biopsy, suction type (separate procedure).	70	45

Appendix Table B.1
List of Reference Services:
Obstetrics and Gynecology
Harvard RBRVS Study

CPT-4	Description	Service Work Total	Intra
99231	Subsequent hospital care, per day, for the evaluation and mangement of a patient, level one, approximately 15 minutes.	55	45
99213	Office/outpatient visit for the evaluation and management of an established patient, level three, approximately 15 minutes.	55	40
99212	Office/outpatient visit for the evaluation and management of an established patient, level two, approximately 10 minutes.	40	25

Appendix Table B.1
List of Reference Services:
Ophthalmology
Harvard RBRVS Study

CPT-4	Description	Service Total	Work Intra
67108	Repair of retinal detachment, one or more sessions, with vitrectomy, any method, with or without air or gas tamponade, with or without focal endolaser photocoagulation, may include procedures 67101-67107 and/or removal of lens by same technique.	1975	1355
67107	Repair of retinal detachment, one or more sessions, scleral buckling (such as lamellar excision, imbrication or encircling procedure), with or without implant, may include procedures 67101, 67105.	1390	900
67228	Destruction of extensive or progressive retinopathy (eg, diabetic retinopathy), one or more sessions, photocoagulation (laser or xenon arc).	1230	700
65285	Repair of laceration, cornea and/or sclera, perforating, with reposition or resection of uveal tissue.	1195	625
67036	Vitrectomy, mechanical, pars plana approach.	1125	665
66984	Extracapsular cataract removal with insertion of intraocular lens prosthesis (one stage procedure), manual or mechanical technique (eg, irrigation and aspiration or phacoemulsification).	980	640
66983	Intracapsular cataract extraction with insertion of intraocular lens prosthesis (one stage procedure).	850	540

Appendix Table B.1
List of Reference Services:
Ophthalmology
Harvard RBRVS Study

CPT-4	Description	Service Work Total	Intra
66985	Insertion of intraocular lens prosthesis (secondary implant) not associated with concurrent cataract removal.	785	435
67010	Removal of vitreous, anterior approach (open sky technique or limbal incision), subtotal removal with mechanical vitrectomy.	660	420
67227	Destruction of extensive or progressive retinopathy (eg, diabetic retinopathy), one or more sessions, cryotherapy, diathermy.	625	395
67145	Prophylaxis of retinal detachment (eg, retinal break, lattice degeneration) without drainage, one or more sessions, photocoagulation.	505	235
65855	Trabeculoplasty by laser surgery, one or more sessions (defined treatment series).	460	225
66761	Iridotomy by photocoagulation (one or more sessions) (eg, for glaucoma).	375	195
66821	Discission of secondary membraneous cataract (opacified posterior lens capsule and/or anterior hyaloid, laser surgery (eg, yag laser) (one or more stages).	275	125
67840	Excision of lesion of eyelid (except chalazion) without closure or with simple direct closure.	200	120

Appendix Table B.1
List of Reference Services:
Ophthalmology
Harvard RBRVS Study

CPT-4	Description	Service Total	Work Intra
92004	Ophthalmological services: medical examination and evaluation with initiation of diagnostic and treatment program, comprehensive, new patient, one or more visits.	160	120
99243	Office consultation for a new or establised patient, level three, approximately 40 minutes.	150	105
68840	Probing of lacrimal canaliculi, with or without irrigation.	120	85
92012	Ophthalmological services: medical examination and evaluation, with initiation or continuation of diagnostic and treatment program, intermediate, established patient.	60	.
92225	Ophthalmoscopy, extended as for retinal detachment (may include use of contact lens, drawing or sketch, and/or fundus biomicroscopy), with medical diagnostic evaluation, initial.	60	.
99213	Office/outpatient visit for the evaluation and management of an established patient, level three, approximately 15 minutes.	55	40

Appendix Table B.1
List of Reference Services:
Ophthalmology
Harvard RBRVS Study

CPT-4	Description	Service Work Total	Intra
92083	Visual field exam, unilateral or bilateral, w/ medical diagnostic evaluation, extended exam (eg, goldmann visual fields with at least 3 isopters plotted and static determination within the central 30 , or quantitative, automated threshold perimetry, octopus program g-1, 32 or 42, humphrey visual field analyzer full threshold programs 30-2, 24-2, or 30/60-2).	50	.
67515	Injection of therapeutic agent into tenon's capsule.	35	.
92285	External ocular photography with medical diagnostic evaluation for documentation of medical progress (eg, close-up photography, slit lamp photography, goniophotography, stereo-photography).	20	.

Appendix Table B.1
List of Reference Services:
Orthopedic Surgery
Harvard RBRVS Study

CPT-4	Description	Service Total	Work Intra
22812	Arthrodesis, anterior, for spinal deformity, with or without cast, with bone graft, 8 or more vertebrae.	2700	1700
22141	Reconstruction of spine with bone graft (autograft, allograft) and/or methyl methacrylate following resection of single vertebral body, lumbar.	2525	1500
27132	Conversion of previous hip surgery to total hip replacement, w/ or w/o autograft or allograft.	2130	1370
27091	Removal of hip prosthesis, complicated, including "total hip" and methyl methacrylate, when applicable.	2035	1310
27447	Arthroplasty, knee, condyle and plateau, medial and lateral compartments with or without patella resurfacing ("total knee replacement").	1955	1140
27130	Arthroplasty, acetabular and proximal femoral prosthetic replacement (total hip replacement), with or without autograft or allograft.	1855	1190
23472	Arthroplasty with glenoid and proximal humeral replacement (eg, total shoulder).	1595	1070
63017	Laminectomy with exploration and/or decompression of spinal cord and/or cauda equina, without facetectomy, foraminotomy or diskectomy, (eg, spinal stenosis), more than 2 vertebral segments, lumbar.	1575	1000

Appendix Table B.1
List of Reference Services:
Orthopedic Surgery
Harvard RBRVS Study

CPT-4	Description	Service Total	Work Intra
27236	Open treatment of closed or open femoral fracture, proximal end, neck, internal fixation or prosthetic replacement.	1405	690
27244	Open treatment of closed or open intertrochanteric, pertrochanteric, or subtrochanteric femoral fracture, with internal fixation.	1350	620
27125	Partial hip replacement prosthesis (eg, femoral stem prosthesis, bipolar arthroplasty).	1310	690
24515	Open treatment of closed or open humeral shaft fracture, with or without internal or external skeletal fixation.	1085	665
27524	Open treatment of closed or open patellar fracture, with repair and/or excision.	930	545
27310	Arthrotomy, knee, for infection, with exploration, drainage or removal of foreign body.	820	330
29881	Arthroscopy, knee, surgical, with meniscectomy (medial or lateral including any meniscal shaving).	740	465
28292	Hallux valgus (bunion) correction, with or without sesamoidectomy, keller, mcbride or mayo type procedure.	620	290

Appendix Table B.1
List of Reference Services:
Orthopedic Surgery
Harvard RBRVS Study

CPT-4	Description	Service Total	Work Intra
25605	Treatment of closed distal radial fracture (eg, colles or smith type) or epiphyseal separation, with or without fracture of ulnar styloid, with manipulation.	540	185
27425	Lateral retinacular release (any method).	500	215
64721	Neuroplasty and/or transposition, median nerve at carpal tunnel.	395	165
25111	Excision of ganglion, wrist (dorsal or volar), primary.	320	130
26055	Tendon sheath incision for trigger finger.	255	90
99254	Initial inpatient consultation for a new or established patient, level four, approximately 80 minutes.	230	195
28470	Treatment of closed metatarsal fracture, without manipulation, without percutanecus pinning, each.	175	60
99204	Office/outpatient visit for the evaluation and management of a new patient, level four, approximately 45 minutes.	170	115
20610	Arthrocentesis, aspiration and/or injection, major joint or bursa (eg, shoulder, hip, knee joint, subacromial bursa).	80	45

Appendix Table B.1
List of Reference Services:
Orthopedic Surgery
Harvard RBRVS Study

CPT-4	Description	Service Total	Work Intra
99213	Office/outpatient visit for the evaluation and management of an established patient, level three, approximately 15 minutes.	55	40
99231	Subsequent hospital care, per day, for the evaluation and mangement of a patient, level one, approximately 15 minutes.	55	45
73510	Radiologic examination, hip, complete, minimum of two views.	20	--
73560	Radiologic examination, knee, anteroposterior and lateral views.	15	--

Appendix Table B.1
List of Reference Services:
Otolaryngology
Harvard RBRVS Study

CPT-4	Description	Service Work Total	Intra
41155	Glossectomy, composite procedure with resection floor of mouth, mandibular resection, and radical neck dissection (commando type).	2325	1360
42420	Excision of parotid tumor or parotid gland, total, with dissection and preservation of facial nerve.	1850	1250
69642	Tympanoplasty with mastoidectomy (including canalplasty, middle ear surgery, tympanic membrane repair), with ossicular chain reconstruction.	1625	1200
31225	Maxillectomy, without orbital exenteration.	1510	900
31360	Laryngectomy, total, without radical neck dissection.	1510	800
69641	Tympanoplasty with mastoidectomy (including canalplasty, middle ear surgery, tympanic membrane repair), without ossicular chain reconstruction.	1220	905
69633	Tympanoplasty without mastoidectomy (including canalplasty, atticotomy and/or middle ear surgery), initial or revision, with ossicular chain reconstruction and synthetic prosthesis (eg, partial/total ossicular replacement prosthesis, (porp/torp).	1170	825
69631	Tympanoplasty without mastoidectomy (including canalplasty, atticotomy and/or middle ear surgery), initial or revision, without ossicular chain reconstruction.	950	635

Appendix Table B.1
List of Reference Services:
Otolaryngology
Harvard RBRVS Study

CPT-4	Description	Service Work Total	Intra
41120	Glossectomy, less than one-half tongue.	875	395
31201	Ethmoidectomy, intranasal, total.	785	485
31255	Nasal endoscopy, surgical, with ethmoidectomy, anterior and posterior (total).	690	560
42440	Excision of submandibular (submaxillary) gland.	655	390
30520	Septoplasty or submucous resection, with or without cartilage scoring, contouring or replacement with graft.	550	320
31603	Tracheostomy, emergency procedure, transtracheal.	415	280
31541	Laryngoscopy, direct, operative, with excision of tumor and/or stripping of vocal cords or epiglottis, with operating microscope.	355	255
31535	Laryngoscopy, direct, operative, with biopsy.	315	180
99244	Office consultation for a new or establised patient, level four, approximately 60 minutes.	225	160
21320	Manipulative treatment, nasal bone fracture, with stabilization.	180	110
99204	Office/outpatient visit for the eval/mngmnt of a new patient, level four, approx 45 minutes.	170	115

Appendix Table B.1
List of Reference Services:
Otolaryngology
Harvard RBRVS Study

CPT-4	Description	Service Work Total	Intra
69433	Tympanostomy (requiring insertion of ventilating tube), local or topical anesthesia.	145	85
31575	Laryngoscopy, flexible fiberoptic, diagnostic.	110	70
99202	Office/outpatient visit for the evaluation and management of a new patient, level two, approximately 20 minutes.	75	55
31505	Laryngoscopy, indirect (separate procedure), diagnostic.	60	35
99213	Office/outpatient visit for the evaluation and management of an established patient, level three, approximately 15 minutes.	55	40

Appendix Table B.1
List of Reference Services:
Cardiothoracic Surgery
Harvard RBRVS Study

CPT-4	Description	Service Work Total	Intra
33870	Transverse arch graft, with cardiopulmonary bypass.	3745	2575
33514	Coronary artery bypass, autogenous graft, (eg, saphenous vein or internal mammary artery), five coronary grafts.	2985	1880
33430	Replacement, mitral valve, with cardiopulmonary bypass.	2920	1650
33405	Replacement, aortic valve, with cardiopulmonary bypass.	2825	1600
33512	Coronary artery bypass, autogenous graft, (eg, saphenous vein or internal mammary artery), three coronary grafts.	2625	1580
33425	Valvuloplasty, mitral valve, with cardiopulmonary bypass, without prosthetic ring, without radical reconstruction.	2540	1655
33500	Repair of coronary arteriovenous or arteriocardiac chamber fistula.	2375	1365
33510	Coronary artery bypass, autogenous graft, (eg, saphenous vein or internal mammary artery), single graft.	2265	1295

Appendix Table B.1
List of Reference Services:
Cardiothoracic Surgery
Harvard RBRVS Study

CPT-4	Description	Service Total	Work Intra
35081	Direct repair of aneurysm or excision (partial or total) and graft insertion, with or without patch graft, for aneurysm or occlusive disease, abdominal aorta.	2200	1260
32480	Lobectomy, total or segmental.	1730	945
35301	Thromboendarterectomy, with or without patch graft, carotid, vertebral, subclavian, by neck incision.	1610	900
32500	Wedge resection of lung, single or multiple.	1300	750
39010	Mediastinotomy with exploration, drainage, or removal of foreign body, transthoracic.	1230	735
32100	Thoracotomy, major, with exploration and biopsy.	1000	395
39020	Mediastinotomy with exploration, drainage, or removal of foreign body, sternal split	830	265
33207	Insertion of permanent pacemaker with transvenous electrode(s), ventricular.	725	335
33206	Insertion of permanent pacemaker with transvenous electrode(s), atrial.	600	285
39400	Mediastinoscopy, with or without biopsy.	510	265

Appendix Table B.1
List of Reference Services:
Cardiothoracic Surgery
Harvard RBRVS Study

CPT-4	Description	Service Total	Work Intra
32020	Tube thoracostomy with or without water seal (eg, for abscess, hemothorax, empyema) (separate procedure).	395	100
99223	Initial hospital care, per day, for the evaluation and management of a patient, level three, approximately 70 minutes.	255	180
99244	Office consultation for a new or establised patient, level four, approximately 60 minutes.	225	160
33010	Pericardiocentesis, initial.	220	125
32000	Thoracentesis, puncture of pleural cavity for aspiration, initial or subsequent.	155	110
99213	Office/outpatient visit for the evaluation and management of an established patient, level three, approximately 15 minutes.	55	40
99231	Subsequent hospital care, per day, for the evaluation and management of a patient, level one, approximately 15 minutes.	55	45

Appendix Table B.1
List of Reference Services:
Urology
Harvard RBRVS Study

CPT-4	Description	Service Work Total	Intra
51595	Cystectomy, complete, with ureteroileal conduit orsigmoid bladder, including bowel anastomosis, with bilateral pelvic lymphadenectomy, including external iliac, hypogastric and obturator nodes.	3400	2120
51590	Cystectomy, complete, with ureteroileal conduit or sigmoid bladder, including bowel anastomosis.	3000	2000
55845	Prostatectomy, retropubic radical, with bilateral pelvic lymphadenectomy, including external iliac, hypogastric and obturator nodes.	2655	1740
50236	Nephrectomy with total ureterectomy and bladder cuff, through separate incision.	2315	1550
50230	Nephrectomy, including partial ureterectomy, any approach including rib resection, radical, with regional lymphadenectomy and/or vena caval thrombectomy.	2040	1370
50780	Ureteroneocystostomy, anastomosis of ureter to bladder, or other operations for correction of vesicoureteral reflux.	1700	1090
50220	Nephrectomy, including partial ureterectomy, any approach including rib resection.	1585	1015

Appendix Table B.1
List of Reference Services:
Urology
Harvard RBRVS Study

CPT-4	Description	Service Work Total	Intra
55831	Prostatectomy (including control of postoperative bleeding, vasectomy, meatotomy, urethral calibration and/or dilation, and internal urethrotomy), retropubic, subtotal.	1420	885
55821	Prostatectomy (including control of postoperative bleeding, vasectomy, meatotomy, urethral calibration and/or dilation, and internal urethrotomy), suprapubic, subtotal, one or two stages.	1290	765
52601	Transurethral resection of prostate, including controlof postoperative bleeding, complete (vasectomy, meatotomy, cystourethroscopy, urethral calibration and/or dilation, and internal urethrotomy are included).	1145	690
50590	Lithotripsy, extracorporeal shock wave.	955	685
54400	Insertion of penile prosthesis, non-inflatable (semi-rigid).	850	520
52336	Cystourethroscopy, with ureteroscopy and/or pyeloscopy (includes dilation of the ureter by any method), with removal or manipulation of calculus (ureteral catheterization is included).	685	555

Appendix Table B.1
List of Reference Services:
Urology
Harvard RBRVS Study

CPT-4	Description	Service Work Total	Intra
54640	Orchiopexy, any type, with or without hernia repair.	650	430
54520	Orchiectomy, simple (including subcapsular), with or without testicular prosthesis, scrotal or inguinal approach.	490	290
54161	Circumcision, surgical excision other than clamp, device or dorsal slit, except newborn.	320	235
52332	Cystourethroscopy, with insertion of indwelling ureteral stent (eg, gibbons or double-j type).	280	170
99254	Initial inpatient consultation for a new or established patient, level four, approximately 80 minutes.	230	195
52000	Cystourethroscopy (separate procedure).	200	85
99204	Office/outpatient visit for the evaluation and management of a new patient, level four, approximately 45 minutes.	170	115
55700	Biopsy, prostate, needle or punch, single or multiple, any approach.	155	95
99242	Office consultation for a new or establised patient, level two, approximately 30 minutes.	110	80

Appendix Table B.1
List of Reference Services:
Urology
Harvard RBRVS Study

CPT-4	Description	Service Work Total	Intra
51700	Bladder irrigation, simple, lavage and/or instillation.	90	60
99231	Subsequent hospital care, per day, for the evaluationand mangement of a patient, level one, approximately 15 minutes.	55	45
99213	Office/outpatient visit for the evaluation and managementof an established patient, level three, approximately 15 minutes.	55	40
53670	Catheterization, urethra, simple.	50	35

Appendix C

Appendix C.1
Specialty reference set: Sorted by Cpt Code
(Harvard RBRVS study -- June, 1993)

Sp	Cpt	Mod	Global surg pack	Description	HCFA ref set	AMA ref set	MFS93 total work	Signif revi-sion	Intra-work % S.E.	Intra-work N	Frequency of claims (000s) 1988 BMAD	Frequency of claims (000s) 1990 HIAA
dm	11050		000	Trim skin lesion	2		42	n	5.0	15	213	161
dm	11100		000	Biopsy of skin lesion	n	s	80	n	2.8	101	683	429
dm	11200		010	Removal of skin tags	1	s	69	n	6.1	74	60	80
gf	11200		010	Removal of skin tags	1	s	69	n	6.1	74	60	80
im	11200		010	Removal of skin tags	1	s	69	n	6.1	74	60	80
dm	11201		ZZZ	Removal of added skin tags	2		25	i	5.8	28	7	5
dm	11401		010	Removal of skin lesion	1	s	126	n	4.2	103	147	178
gf	11401		010	Removal of skin lesion	1	s	126	n	4.2	103	147	178
dm	11441		010	Removal of skin lesion	2	s	155	n	4.1	113	170	113
dm	11640		010	Removal of skin lesion	n	s	147	n	4.9	78	81	26
dm	11642		010	Removal of skin lesion	n	s	286	n	4.2	204	156	37
ps	11642		010	Removal of skin lesion	n	o	286	n	4.2	204	156	37
dm	11643		010	Removal of skin lesion			343	n	.	.	.	.
gs	12011		010	Repair superficial wound(s)	2	o	170	i	8.5	101	39	104
ps	13100		010	Repair of wound or lesion	2		304	n	12.0	16	2	4
dm	13132		010	Repair of wound or lesion	n	s	418	i	4.0	102	16	21
ps	13132		010	Repair of wound or lesion	n	s	418	i	4.0	102	16	21
ps	13300		010	Repair of wound or lesion	2		508	n	4.5	102	5	7
ps	14000		090	Skin tissue rearrangement	2		539	n	14.1	16	3	3
dm	14040		090	Skin tissue rearrangement	n	s	713	n	6.7	102	24	14
ps	14040		090	Skin tissue rearrangement	n	s	713	n	6.7	102	24	14
gs	15100		090	Skin split graft procedure	2		800	n	4.3	193	27	10
ps	15100		090	Skin split graft procedure	2		800	n	4.3	193	27	10
ps	15220		090	Skin full graft procedure	2		737	n	2.1	12	2	1
ps	15260		090	Skin full graft procedure	2	o	950	n	4.0	102	14	4
ps	15732		090	Muscle-skin flap, head/neck	2	s	1200	n	14.1	10	2	.
ps	15755		090	Microvascular free flap	n	s	2813	n	13.9	14	.	.
ps	15786		010	Abrasion treatment of lesion	2		197	n	14.7	12	5	1
ps	15831		090	Excise excessive skin tissue	2		1158	n	16.3	10	.	2
ps	15946		090	Removal of pressure sore	2	s	1966	n	5.6	100	1	.
dm	17000		010	Destruction of facial lesion	n	s	64	i	3.6	150	1,424	542
dm	17100		010	Destruction of skin lesion	n	s	54	n	4.2	150	632	602
dm	17101		ZZZ	Destruction of 2nd lesion	2	s	10	i	4.4	99	327	161
dm	17304		000	Chemosurgery of skin lesion	n	s	754	i	10.9	30	32	10
gs	19120		090	Removal of breast lesion			480	n	4.6	101	.	.
gs	19140		090	Removal of breast tissue	1	s	486	n	7.1	31	3	4
gs	19240		090	Removal of breast			1460	n	4.2	199	.	.
ps	19340		ZZZ	Immediate breast prosthesis	2	s	628	n	4.8	11	.	2
ps	19342		090	Delayed breast prosthesis	2		1056	n	9.9	11	.	2
gs	20220		000	Bone biopsy, trocar/needle	2		126	n	12.7	16	47	15
gf	20610		000	Drain/inject joint/bursa	1	s	78	n	5.4	583	1,327	429
or	20610		000	Drain/inject joint/bursa	1	o	78	n	5.4	583	1,327	429
mx	21030		090	Removal of face bone lesion	2		700		.	.	1	2
mx	21040		090	Removal of jaw bone lesion	2		200		.	.	2	3
mx	21041		090	Removal of jaw bone lesion	2		500		.	.	1	2
mx	21110		090	Interdental fixation	2		500		.	.	.	2
mx	21210		090	Face bone graft	2		950		.	.	.	1
mx	21215		090	Lower jaw bone graft			1000		.	.	.	.
mx	21240		090	Reconstruction of jaw joint	2	o	1300	n	6.8	102	.	3
mx	21248		090	Reconstruction of jaw	2		1100		.	.	.	1
mx	21249		090	Reconstruction of jaw			1700		.	.	.	.
mx	21310		000	Treatment of nose fracture	2		58		.	.	1	3
mx	21315		010	Treatment of nose fracture	2		140		.	.	.	2
ot	21320		010	Treatment of nose fracture	2		180	d	4.6	103	1	9
mx	21365		090	Repair cheek bone fracture	2	o	1388	n	5.5	114	.	2
mx	21462		090	Repair lower jaw fracture	2		908		.	.	.	1
mx	21470		090	Repair lower jaw fracture	2	o	1409	n	5.1	117	1	1
mx	21480		000	Reset dislocated jaw	2		61		.	.	1	1
mx	21485		090	Reset dislocated jaw	2		190		.	.	.	1
or	22141		090	Reconstruct thorax spine	2		2525		.	.	.	.

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Specialty reference set: Sorted by Cpt Code
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Sp	Cpt	Mod	Global surg pack	Description	HCFA ref set	AMA ref set	MFS93 total work	Signif revi-sion	Intra-work % S.E.	Intra-work N	Frequency of claims (000s) 1988 BMAD	Frequency of claims (000s) 1990 HIAA
ns	22554		090	Neck spine fusion	2	s	1800	i	8.7	17	5	8
ns	22558		090	Lumbar spine fusion	2		2196	n	9.1	11	.	1
or	22812		090	Fusion of spine	2		2700		.	.	.	.
or	23472		090	Reconstruct shoulder joint	2		1597	n	6.0	52	3	1
or	24515		090	Repair humerus fracture	2		1084	n	4.7	76	3	1
or	25111		090	Remove wrist tendon lesion	2		322	n	4.5	78	4	19
or	25605		090	Treat fracture radius/ulna	2		538	n	3.8	153	34	29
or	26055		090	Incise finger tendon sheath	1		253	n	4.3	78	17	14
or	27091		090	Removal of hip prosthesis	2		2033	n	6.3	69	1	.
or	27125		090	Partial hip replacement	2		1312	n	3.3	155	32	3
or	27130		090	Total hip replacement	1		1855	n	5.8	104	86	17
or	27132		090	Total hip replacement	2		2129	n	3.2	147	5	1
or	27236		090	Repair of thigh fracture	2		1404	n	3.3	151	76	7
or	27244		090	Repair of thigh fracture	1		1435	n	4.5	259	114	9
or	27310		090	Exploration of knee joint	2		820	n	9.9	11	2	1
or	27425		090	Lateral retinacular release	2		501	n	16.1	13	2	7
or	27447		090	Total knee replacement	1		1955	n	3.1	149	111	19
or	27524		090	Repair of kneecap fracture	2		930	n	5.7	11	4	2
gs	27590		090	Amputate leg at thigh	1		1017	n	4.5	155	27	2
or	28292		090	Correction of bunion	2		619	n	5.8	102	24	21
or	28470		090	Treat metatarsal fracture	2		174	n	5.4	77	16	24
or	29881		090	Knee arthroscopy/surgery	1		741	n	4.8	247	26	69
ot	30520		090	Repair of nasal septum	n	s	550	n	9.1	16	9	45
ot	31201		090	Removal of ethmoid sinus	2		786	n	11.4	15	2	4
ot	31225		090	Removal of upper jaw	2	s	1508	n	7.1	12	1	.
ot	31255		000	Removal of ethmoid sinus	2		691	n	12.4	15	2	5
ot	31360		090	Removal of larynx	2	s	1508	n	6.5	15	2	.
im	31500		000	Insert of emergency airway	1	s	232	i	4.8	293	177	36
ot	31505		000	Diagnostic laryngoscopy	1	o	61	n	11.4	15	36	16
ot	31535		000	Operative laryngoscopy	2		314	n	4.2	102	9	4
ot	31541		000	Operative laryngoscopy	2		353	n	14.3	15	9	9
ot	31575		000	Diagnostic laryngoscopy	1	o	108	n	12.9	15	109	66
ot	31603		000	Incision of windpipe	2		413	n	5.6	298	3	1
gs	31625		000	Bronchoscopy with biopsy	1	o	334	n	5.1	93	67	21
im	32000		000	Drainage of chest	1	s	154	n	4.6	359	118	25
ts	32000		000	Drainage of chest	1	o	154	n	4.6	359	118	25
im	32020		000	Insertion of chest tube	1	s	439	i	4.2	370	52	24
ts	32020		000	Insertion of chest tube	1	o	439	i	4.2	370	52	24
ca	32100		090	Exploration/biopsy of chest	1	s	1000	n	9.6	12	7	4
ts	32100		090	Exploration/biopsy of chest	1	s	1000	n	9.6	12	7	4
ts	32480		090	Partial removal of lung			1730	n	4.4	91	.	.
ts	32500		090	Partial removal of lung	n	o	1300	i	11.2	12	6	3
ca	33010		000	Drainage of heart sac	2	s	222	n	6.7	94	4	1
ts	33010		000	Drainage of heart sac	2	o	222	n	6.7	94	4	1
ts	33206		090	Insertion of heart pacemaker	n	o	600	n	6.9	7	10	2
ca	33207		090	Insertion of heart pacemaker	n	o	723	n	6.4	155	42	6
ts	33207		090	Insertion of heart pacemaker	n	s	723	n	6.4	155	42	6
ts	33405		090	Replacement of aortic valve			2827	n	5.6	81	.	.
ts	33425		090	Repair of mitral valve	2		2538	n	11.6	12	1	1
ts	33430		090	Replacement of mitral valve			2921	i	11.8	12	.	.
ts	33500		090	Repair heart vessel fistula	2	s	2098	n	3.7	9	.	.
ts	33510		090	Coronary artery bypass			2230	n	2.3	10	.	.
ts	33512		090	Coronary arteries bypass			2488	n	5.6	80	.	.
ts	33514		090	Coronary arteries bypass			2748	n	2.3	10	.	.
ts	33870		090	Transverse aortic arch graft	1		3747	n	3.7	9	.	.
gs	34101		090	Removal of artery clot	2		868	n	10.4	45	11	1
gs	35081		090	Repair defect of artery	1	o	2200	n	5.2	81	27	5
ts	35081		090	Repair defect of artery	1	s	2200	n	5.2	81	27	5
ca	35301		090	Rechanneling of artery	1	s	1608	n	5.6	155	67	13
gs	35301		090	Rechanneling of artery	1	o	1608	n	5.6	155	67	13

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Sp	Cpt	Mod	Global surg pack	Description	HCFA ref set	AMA ref set	MFS93 total work	Signif revi-sion	Intra-work % S.E.	Intra-work N	Frequency of claims (000s) 1988 BMAD	Frequency of claims (000s) 1990 HIAA
ns	35301		090	Rechanneling of artery	1	s	1608	n	5.6	155	67	13
ts	35301		090	Rechanneling of artery	1	s	1608	n	5.6	155	67	13
ra	35473		000	Repair arterial blockage	2	s	600		.	.	.	.
gs	35641		090	Artery bypass graft	2		2250	n	6.0	46	1	1
gs	36800		000	Insertion of cannula	2		241	n	3.4	95	30	6
gs	36830		090	Artery-vein graft	2		773	n	6.4	52	36	5
gs	38100		090	Removal of spleen, total	2		1190	n	3.3	98	7	4
ts	39010		090	Exploration of chest	2		1231	n	18.8	11	1	1
ts	39020		090	Exploration of chest	2		829	n	4.0	23	1	.
ts	39400		010	Visualization of chest	2		508	n	4.5	92	8	4
ot	41120		090	Partial removal of tongue	2		877	n	9.8	15	1	.
ot	41155		090	Tongue, jaw, & neck surgery	2		2323	n	11.8	15	1	.
ot	42420		090	Excise parotid gland/lesion	2	s	1850	n	4.1	15	2	2
ot	42440		090	Excision submaxillary gland	2	s	656	n	9.0	15	4	3
ga	43235		000	Upper GI endoscopy,diagnosis	n	s	237	n	5.7	128	511	237
gf	43235		000	Upper GI endoscopy,diagnosis	n	s	237	n	5.7	128	511	237
ga	43239		000	Upper GI endoscopy, biopsy	n	s	267	n	3.4	104	331	156
ga	43255		000	Operative upper GI endoscopy	n	s	437	n	4.0	105	26	6
ga	43260		000	Endoscopy,bile duct/pancreas	n	s	593	i	3.9	90	38	18
ga	43262		000	Endoscopy,bile duct/pancreas	n	s	734	n	4.6	76	7	2
ga	43450		000	Dilate esophagus	1	s	138	n	4.4	103	51	17
ga	43832		090	Place gastrostomy tube	1	s	1060	n	6.3	7	16	1
gs	43832		090	Place gastrostomy tube	1	s	1060	n	6.3	7	16	1
gs	44120		090	Removal of small intestine	2		1307	n	3.3	98	31	7
gs	44140		090	Partial removal of colon			1696	i	3.5	99	.	.
gs	44150		090	Removal of colon	2		1890	n	8.0	55	6	2
gs	44950		090	Appendectomy	1	s	602	n	5.7	146	8	59
gs	45110		090	Removal of rectum	1	s	2153	n	3.8	97	10	2
ga	45305		000	Proctosigmoidoscopy; biopsy	1	o	100	n	16.7	19	13	6
ga	45330		000	Sigmoidoscopy, diagnostic	n	s	95	n	4.6	175	784	482
im	45330		000	Sigmoidoscopy, diagnostic	n	s	95	n	4.6	175	784	482
ga	45378		000	Diagnostic colonoscopy	n	s	367	n	5.4	157	453	224
ga	45380		000	Colonoscopy and biopsy	n	s	397	n	4.0	107	165	93
gf	45380		000	Colonoscopy and biopsy	n	s	397	n	4.0	107	165	93
ga	45385		000	Colonoscopy, lesion removal	2	s	516	i	5.4	161	239	103
gs	46260		090	Hemorrhoidectomy	2		665	n	3.5	98	9	17
gs	46934		090	Destruction of hemorrhoids	2		381	n	7.7	13	12	13
gf	47000		000	Needle biopsy of liver	n	s	251	n	4.0	104	18	13
gs	47600		090	Removal of gallbladder			1060	n	4.0	197	.	.
gs	47610		090	Removal of gallbladder			1375	n	2.1	18	.	.
gs	48150		090	Partial removal of pancreas	1	s	3000	n	11.4	12	2	1
gs	49505		090	Repair inguinal hernia			612	i	4.4	204	.	.
ur	50220		090	Removal of kidney	2		1587	n	15.3	14	5	2
ur	50230		090	Removal of kidney	2	s	2041	n	14.8	14	11	4
ur	50236		090	Removal of kidney & ureter	2		2316	n	3.6	14	1	.
ur	50590		090	Fragmenting of kidney stone	2	s	955	n	6.5	65	20	23
ur	50780		090	Reimplant ureter in bladder	2	s	1700	n	6.3	14	1	1
ur	51590		090	Remove bladder; revise tract	2		3000	n	4.1	13	2	.
ur	51595		090	Remove bladder; revise tract	2	s	3400	n	5.9	112	3	1
ur	51700		000	Irrigation of bladder	2		88	n	7.8	13	54	22
ur	52000		000	Cystoscopy	1	s	200	i	4.4	221	634	260
ur	52332		000	Cystoscopy and treatment	2		281	n	3.7	110	26	21
ur	52336		000	Cystoscopy, stone removal	2		683	n	5.6	112	7	10
ur	52601		090	Prostatectomy (turp)	n	s	1143	n	4.6	114	213	49
ur	53670		000	Insert urinary catheter	2	s	50	n	18.1	14	263	66
ur	54161		010	Circumcision	1		319	n	8.5	14	10	18
ur	54400		090	Insert semi-rigid prosthesis	2		852	n	6.2	100	3	1
ur	54520		090	Removal of testis	2		489	n	16.2	14	20	2
ur	54640		090	Suspension of testis	2	s	650	n	11.4	14	.	6
ur	55700		000	Biopsy of prostate	1	o	156	n	14.5	14	105	30

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Sp	Cpt	Mod	Global surg pack	Description	HCFA ref set	AMA ref set	MFS93 total work	Signif revi-sion	Intra-work % S.E.	Intra-work N	Frequency of claims (000s) 1988 BMAD	Frequency of claims (000s) 1990 HIAA
ur	55821		090	Removal of prostate	2		1290	n	13.2	14	8	1
ur	55831		090	Removal of prostate	2		1420	n	14.6	14	5	1
ur	55845		090	Extensive prostate surgery	2	s	2654	n	14.5	14	15	4
ob	56420		010	Drainage of gland abscess	2		133	n	10.8	17	1	6
ob	56640		090	Extensive vulva surgery	2		1884	n	7.7	10	.	.
ob	57240		090	Repair bladder & vagina	2		535	n	6.7	16	11	4
ob	57260		090	Repair of vagina	2		753	n	12.4	18	16	6
ob	57280		090	Suspension of vagina	2		828	n	17.2	14	1	1
ob	57454		000	Vagina examination & biopsy	2		126	n	4.3	82	16	195
ob	57500		000	Biopsy of cervix	2	o	96	n	13.7	15	13	49
ob	57520		090	Conization cervix	2		339	n	11.9	19	6	37
ob	58100		000	Biopsy of uterus lining	2	o	71	n	12.8	17	32	130
ob	58120		010	Dilation and curettage (d&c)	1	s	243	n	5.1	89	50	213
gs	58150		090	Total hysterectomy	1	s	1290	i	6.4	176	40	126
ob	58150		090	Total hysterectomy	1	s	1290	i	6.4	176	40	126
ob	58152		090	Total hysterectomy	2		1400	i	3.0	17	2	5
ob	58210		090	Extensive hysterectomy	2		2380	i	10.9	11	2	1
ob	58240		090	Removal of pelvis contents	2		2858	n	5.3	6	1	.
ob	58260		090	Vaginal hysterectomy	1	s	1200	i	4.6	17	6	26
ob	58720		090	Removal of ovary/tube(s)	1	s	615	n	9.4	17	8	21
ob	58940		090	Removal of ovary(s)	2		649	n	0.6	14	4	7
ob	58950		090	Resect ovarian malignancy	2		1400	n	9.9	11	1	1
ob	58951		090	Resect ovarian malignancy	2		2020	i	13.5	10	1	.
ob	59410		MMM	Obstetrical care	n	o	1214	i	6.4	157	1	59
gs	60220		090	Partial removal of thyroid	1	s	979	n	8.5	14	5	6
gs	60500		090	Explore parathyroid glands	1		1529	i	3.9	90	6	2
ns	61154		090	Pierce skull, remove clot	n	s	1357	n	5.2	110	4	1
ns	61312		090	Open skull for drainage	2	s	2039	n	4.7	111	7	2
ns	61510		090	Removal of brain lesion	n	s	2322	n	3.9	108	6	4
ns	61512		090	Remove brain lining lesion	2	s	2408	n	4.0	112	3	1
ns	61518		090	Removal of brain lesion	2	s	3204	n	4.2	108	2	1
ns	61520		090	Removal of brain lesion	2	s	3807	n	4.0	18	.	1
ns	61700		090	Inner skull vessel surgery	n	s	3458	n	4.5	108	2	2
gf	62270		000	Spinal fluid tap, diagnostic	1	s	111	n	4.2	305	73	75
im	62270		000	Spinal fluid tap, diagnostic	1	s	111	n	4.2	305	73	75
ns	62270		000	Spinal fluid tap, diagnostic	1	s	111	n	4.2	305	73	75
ns	62284		000	Injection for myelogram	n	s	153	n	6.5	89	38	33
ns	63017		090	Removal of spinal lamina	n	s	1574	n	5.4	278	8	3
or	63017		090	Removal of spinal lamina	n	o	1574	n	5.4	278	8	3
ns	63030		090	Low back disk surgery	n	s	1202	n	5.0	292	22	35
ns	63042		090	Low back disk surgery	n	s	1714	n	4.2	199	6	6
ns	63047		090	Removal of spinal lamina	1	s	1266	n	6.4	17	13	3
ns	63780		090	Insert spinal canal catheter	1		617	n	27.3	10	2	1
ns	64400		010	Injection for nerve block	2		132	d	13.4	10	8	4
ns	64421		010	Injection for nerve block	2		205	n	17.2	11	13	4
ns	64721		090	Carpal tunnel surgery	1	s	396	n	4.9	529	55	54
or	64721		090	Carpal tunnel surgery	1	o	396	n	4.9	529	55	54
ps	64721		090	Carpal tunnel surgery	1	s	396	n	4.9	529	55	54
op	65285		090	Repair of eye wound	1	s	1197	n	9.1	82	1	1
op	65855		090	Laser surgery of eye	1	s	462	n	8.1	153	101	18
op	66761		090	Revision of iris	2	s	374	n	7.8	158	51	10
op	66821		090	Lasering, secondary cataract	1	s	276	n	9.6	161	449	71
op	66983		090	Remove cataract, insert lens	2		848	n	4.9	146	20	7
op	66984		090	Remove cataract, insert lens	2		982	n	7.9	257	1,016	182
op	66985		090	Insert lens prosthesis	2	s	784	n	7.0	255	31	7
op	67010		090	Partial removal of eye fluid	2	s	662	n	7.3	76	7	1
op	67036		090	Removal of inner eye fluid	1	s	1125	n	6.2	84	14	4
op	67107		090	Repair detached retina	1	s	1390	n	5.6	152	16	8
op	67108		090	Repair detached retina	2		1976	n	15.0	19	5	2
op	67145		090	Treatment of retina	2		504	n	8.1	42	16	9

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op	67227		090	Treatment of retinal lesion	2		623	n	11.9	29	6	3
op	67228		090	Treatment of retinal lesion			1230	i	5.6	115	.	.
op	67515		000	Inject/treat eye socket	2		61	n	8.9	13	20	4
op	67840		010	Remove eyelid lesion	2		198	n	7.9	171	22	10
op	68840		010	Explore/irrigate tear ducts	2		122	n	8.6	13	9	2
ot	69433		010	Create eardrum opening	1		146	n	10.8	15	21	13
ot	69631		090	Repair eardrum structures	2		949	n	9.8	15	3	9
ot	69633		090	Rebuild eardrum structures	2	s	1168	n	3.8	10	.	1
ot	69641		090	Revise middle ear & mastoid	1		1220	n	4.2	99	1	2
ot	69642		090	Revise middle ear & mastoid	2	s	1625	n	6.3	10	.	1
ra	70150	26	XXX	X-ray exam of facial bones	1		25		.	.	61	.
ra	70450	26	XXX	Cat scan of head or brain	1		85		.	.	1,202	.
ra	70470	26	XXX	Contrast cat scans of head	1		126	i	8.5	99	745	.
ra	70551	26	XXX	Magnetic image, brain (mri)	1		147	i	5.8	78	391	.
gf	71010	26	XXX	Chest x-ray	1	s	18	n	5.2	102	13,486	.
im	71010	26	XXX	Chest x-ray	1	s	18	n	5.2	102	13,486	.
ra	71010	26	XXX	Chest x-ray	1	o	18	n	5.2	102	13,486	.
ca	71020	26	XXX	Chest x-ray	n		22	n	6.5	115	19,734	.
im	71020	26	XXX	Chest x-ray	n	s	22	n	6.5	115	19,734	.
ra	71020	26	XXX	Chest x-ray	n	o	22	n	6.5	115	19,734	.
ra	72020	26	XXX	X-ray exam of spine	1	o	14		.	.	108	.
or	73510		XXX	X-ray exam of hip	2		20		.	.	.	.
or	73560		XXX	X-ray exam of knee	2		16		.	.	.	.
ra	73620	26	XXX	X-ray exam of foot	1	o	15		.	.	1,173	.
ra	74363	26	XXX	X-ray, bile duct dilatation	n	s	88		.	.	.	.
ra	74740	26	XXX	X-ray female genital tract	n	s	37		.	.	.	.
gf	76091	26	XXX	Mammogram, both breasts	n	s	41	d	4.7	112	3,441	.
ra	76091	26	XXX	Mammogram, both breasts	n	o	41	d	4.7	112	3,441	.
ra	76516	26	XXX	Echo exam of eye	1		55		.	.	698	.
ra	76700	26	XXX	Echo exam of abdomen	1		80	d	3.8	107	1,143	.
ra	76872	26	XXX	Echo exam of prostate	n	o	69		.	.	68	.
ra	77425	26	XXX	Weekly radiation therapy	1		242	i	6.5	110	444	.
ra	78306	26	XXX	Nuclear scan of skeleton	1	o	86	i	3.6	124	847	.
ra	78461	26	XXX	Nuclear scan, heart muscle	n	o	122	n	2.4	108	318	.
ra	78465	26	XXX	Nuclear scan, heart muscle	1	o	145	n	3.1	107	99	.
ra	78472	26	XXX	Nuclear scan, heart muscle	n	o	97		.	.	73	.
ra	78580	26	XXX	Nuclear scan of lung	n	o	73	i	4.8	122	230	.
ra	79000	26	XXX	Nuclear therapy, thyroid	n	o	178	n	5.0	119	7	.
pa	80500	26	XXX	Lab pathology consultation	1	s	36	i	5.3	217	845	.
pa	80502	26	XXX	Lab pathology consultation	2	s	132	n	6.9	148	32	.
pa	85105	26	XXX	Bone marrow, interpretation	2	s	62	n	4.7	86	66	.
pa	86078	26	XXX	Physician blood bank service	2	s	93	n	7.4	80	5	.
pa	88104	26	XXX	Microscopic exam of cells	n	s	56	n	4.3	264	447	.
pa	88160	26	XXX	Cytopathology	n	s	50	d	5.4	92	141	.
pa	88173	26	XXX	Interpretation of smear	n	s	107	n	4.4	87	63	.
pa	88300	26	XXX	Tissue exam by pathologist	1	s	8	n	5.5	456	382	.
pa	88302	26	XXX	Tissue exam by pathologist	2	s	12	n	5.4	555	345	.
pa	88304	26	XXX	Tissue exam by pathologist	2	s	22	n	4.3	647	1,465	.
pa	88305	26	XXX	Tissue exam by pathologist	2	s	74	n	5.5	836	1,413	.
pa	88307	26	XXX	Tissue exam by pathologist	2	s	158	n	4.4	834	442	.
pa	88309	26	XXX	Tissue exam by pathologist	1	s	227	n	4.6	628	260	.
pa	88311	26	XXX	Decalcify tissue	2	s	24	i	8.3	73	191	.
pa	88331	26	XXX	Pathology consult in surgery			118	n	4.7	274	.	.
py	90801		XXX	Psychiatric interview	2	s	217	n	3.3	198	254	.
py	90843		XXX	Psychotherapy, 20-30 min	2	s	109	i	4.7	564	2,136	.
py	90844		XXX	Psychotherapy, 45-50 min	1	s	171	i	3.2	479	2,241	.
py	90845		XXX	Medical psychoanalysis	n	s	176	i	4.6	112	.	.
py	90847		XXX	Special family therapy	n	s	217	i	3.2	193	18	.
py	90853		XXX	Special group therapy	2	s	43	i	5.0	87	612	.
py	90862		XXX	Medication management	2	s	94	n	6.0	99	636	.

Appendix C.1
Specialty reference set: Sorted by Cpt Code
(Harvard RBRVS study -- June, 1993)

Sp	Cpt	Mod	Global surg pack	Description	HCFA ref set	AMA ref set	MFS93 total work	Signif revi-sion	Intra-work % S.E.	Intra-work N	Frequency of claims (000s) 1988 BMAD	Frequency of claims (000s) 1990 HIAA
ga	91010		000	Esophagus motility study	1	o	164	n	13.7	12	9	.
op	92004		XXX	Eye exam, new patient	2		160	i	7.4	177	1,741	.
op	92012		XXX	Eye exam,established patient	2		81	n	8.4	178	4,926	.
op	92083		XXX	Visual field examination(s)	2		51	n	8.0	45	697	.
op	92225		XXX	Special eye exam, initial	1		58	n	6.6	83	606	.
op	92285		XXX	Eye photography	2		20	d	12.7	17	56	.
ca	92950		000	Heart/lungresuscitation/cpr	n	s	377	n	3.6	107	90	.
gf	92950		000	Heart/lungresuscitation/cpr	n	s	377	n	3.6	107	90	.
im	92950		000	Heart/lungresuscitation/cpr	n	s	377	n	3.6	107	90	.
ca	92982		000	Coronary artery dilation	n	o	962	n	7.6	62	79	26
ca	93010		XXX	Electrocardiogram report	n	s	17	n	6.4	204	.	.
im	93010		XXX	Electrocardiogram report			17	n	6.4	204	.	.
ca	93014		XXX	Report on transmitted ECG	2		15	d	10.2	15	162	.
ca	93015	26	XXX	Cardiovascular stress test	n	s	74	d	4.0	103	.	.
gf	93015	26	XXX	Cardiovascular stress test	n	s	74	d	4.0	103	.	.
im	93015	26	XXX	Cardiovascular stress test	n	s	74	d	4.0	103	.	.
ca	93227		XXX	ECG monitor/review, 24 hrs	2		53	n	8.4	16	806	.
ca	93503		000	Insert/place heart catheter	n	o	241	n	4.8	268	232	26
ca	93547	26	000	Heart catheter & angiogram	n	o	482	n	5.8	73	350	94
ca	93618	26	000	Heart rhythm pacing	n	o	424	n	10.6	10	11	1
ca	93880	26	XXX	Extracranial study	n	s	60		.	.	549	.
gf	99201		XXX	Office/outpatient visit, new	1	s	39	n	6.0	999	542	.
dm	99202		XXX	Office/outpatient visit, new	1	s	77	n	6.0	999	1,667	.
ot	99202		XXX	Office/outpatient visit, new	1	o	77	n	6.0	999	1,667	.
dm	99203		XXX	Office/outpatient visit, new	1	s	115	n	6.0	999	2,606	.
gf	99203		XXX	Office/outpatient visit, new	1	s	115	n	6.0	999	2,606	.
im	99203		XXX	Office/outpatient visit, new	1	s	115	n	6.0	999	2,606	.
mx	99203		XXX	Office/outpatient visit, new	1	s	115	n	6.0	999	2,606	.
ps	99203		XXX	Office/outpatient visit, new	1	s	115	n	6.0	999	2,606	.
dm	99204		XXX	Office/outpatient visit, new	1	s	172	n	6.0	999	3,242	.
ga	99204		XXX	Office/outpatient visit, new	1	s	172	n	6.0	999	3,242	.
gf	99204		XXX	Office/outpatient visit, new	1	s	172	n	6.0	999	3,242	.
ns	99204		XXX	Office/outpatient visit, new	1	o	172	n	6.0	999	3,242	.
or	99204		XXX	Office/outpatient visit, new	1	o	172	n	6.0	999	3,242	.
ot	99204		XXX	Office/outpatient visit, new	1	o	172	n	6.0	999	3,242	.
ur	99204		XXX	Office/outpatient visit, new	1	o	172	n	6.0	999	3,242	.
ga	99205		XXX	Office/outpatient visit, new	1	s	229	n	6.0	999	959	.
im	99205		XXX	Office/outpatient visit, new	1	s	229	n	6.0	999	959	.
ob	99205		XXX	Office/outpatient visit, new	1	o	229	n	6.0	999	959	.
gf	99211		XXX	Office/outpatient visit, est	1	s	18	n	6.0	999	2,277	.
im	99211		XXX	Office/outpatient visit, est	1	s	18	n	6.0	999	2,277	.
ca	99212		XXX	Office/outpatient visit, est	1	s	39	n	6.0	999	11,739	.
dm	99212		XXX	Office/outpatient visit, est	1	s	39	n	6.0	999	11,739	.
ga	99212		XXX	Office/outpatient visit, est	1	s	39	n	6.0	999	11,739	.
im	99212		XXX	Office/outpatient visit, est	1	s	39	n	6.0	999	11,739	.
ob	99212		XXX	Office/outpatient visit, est	1	s	39	n	6.0	999	11,739	.
ca	99213		XXX	Office/outpatient visit, est	1	s	57	n	6.0	999	92,238	.
dm	99213		XXX	Office/outpatient visit, est	1	s	57	n	6.0	999	92,238	.
ga	99213		XXX	Office/outpatient visit, est	1	s	57	n	6.0	999	92,238	.
gf	99213		XXX	Office/outpatient visit, est	1	s	57	n	6.0	999	92,238	.
gs	99213		XXX	Office/outpatient visit, est	1	o	57	n	6.0	999	92,238	.
im	99213		XXX	Office/outpatient visit, est	1	s	57	n	6.0	999	92,238	.
mx	99213		XXX	Office/outpatient visit, est	1	o	57	n	6.0	999	92,238	.
ns	99213		XXX	Office/outpatient visit, est	1	o	57	n	6.0	999	92,238	.
ob	99213		XXX	Office/outpatient visit, est	1	s	57	n	6.0	999	92,238	.
op	99213		XXX	Office/outpatient visit, est	1	s	57	n	6.0	999	92,238	.
or	99213		XXX	Office/outpatient visit, est	1	o	57	n	6.0	999	92,238	.
ot	99213		XXX	Office/outpatient visit, est	1	o	57	n	6.0	999	92,238	.
pa	99213		XXX	Office/outpatient visit, est	1	s	57	n	6.0	999	92,238	.
ps	99213		XXX	Office/outpatient visit, est	1	s	57	n	6.0	999	92,238	.

Appendix C.1
Specialty reference set: Sorted by Cpt Code
(Harvard RBRVS study -- June, 1993)

Sp	Cpt	Mod	Global surg pack	Description	HCFA ref set	AMA ref set	MFS93 total work	Signif revision	Intra-work % S.E.	Intra-work N	Frequency of claims (000s) 1988 BMAD	Frequency of claims (000s) 1990 HIAA
ts	99213		XXX	Office/outpatient visit, est	1	o	57	n	6.0	999	92,238	.
ur	99213		XXX	Office/outpatient visit, est	1	s	57	n	6.0	999	92,238	.
ca	99214		XXX	Office/outpatient visit, est	1	s	95	n	6.0	999	9,326	.
ga	99214		XXX	Office/outpatient visit, est	1	s	95	n	6.0	999	9,326	.
gf	99214		XXX	Office/outpatient visit, est	1	s	95	n	6.0	999	9,326	.
ca	99215		XXX	Office/outpatient visit, est	1	s	152	n	6.0	999	4,250	.
dm	99215		XXX	Office/outpatient visit, est	1	s	152	n	6.0	999	4,250	.
ga	99215		XXX	Office/outpatient visit, est	1	s	152	n	6.0	999	4,250	.
gf	99215		XXX	Office/outpatient visit, est	1	s	152	n	6.0	999	4,250	.
im	99215		XXX	Office/outpatient visit, est	1	s	152	n	6.0	999	4,250	.
ob	99215		XXX	Office/outpatient visit, est	1	o	152	n	6.0	999	4,250	.
ca	99222		XXX	Initial hospital care	1	o	184	n	6.0	999	4,642	.
dm	99222		XXX	Initial hospital care	1	s	184	n	6.0	999	4,642	.
ga	99222		XXX	Initial hospital care	1	s	184	n	6.0	999	4,642	.
im	99222		XXX	Initial hospital care	1	s	184	n	6.0	999	4,642	.
ca	99223		XXX	Initial hospital care	1	s	257	n	6.0	999	2,807	.
ga	99223		XXX	Initial hospital care	1	s	257	n	6.0	999	2,807	.
gf	99223		XXX	Initial hospital care	1	s	257	n	6.0	999	2,807	.
im	99223		XXX	Initial hospital care	1	s	257	n	6.0	999	2,807	.
py	99223		XXX	Initial hospital care	1	s	257	n	6.0	999	2,807	.
ts	99223		XXX	Initial hospital care	1	s	257	n	6.0	999	2,807	.
ga	99231		XXX	Subsequent hospital care	1	s	54	n	6.0	999	42,439	.
gf	99231		XXX	Subsequent hospital care	1	s	54	n	6.0	999	42,439	.
mx	99231		XXX	Subsequent hospital care	1	s	54	n	6.0	999	42,439	.
ns	99231		XXX	Subsequent hospital care	1	o	54	n	6.0	999	42,439	.
ob	99231		XXX	Subsequent hospital care	1	s	54	n	6.0	999	42,439	.
or	99231		XXX	Subsequent hospital care	1	o	54	n	6.0	999	42,439	.
ps	99231		XXX	Subsequent hospital care	1	s	54	n	6.0	999	42,439	.
py	99231		XXX	Subsequent hospital care	1	s	54	n	6.0	999	42,439	.
ts	99231		XXX	Subsequent hospital care	1	o	54	n	6.0	999	42,439	.
ur	99231		XXX	Subsequent hospital care	1	o	54	n	6.0	999	42,439	.
dm	99232		XXX	Subsequent hospital care	1	s	90	n	6.0	999	27,665	.
ga	99232		XXX	Subsequent hospital care	1	s	90	n	6.0	999	27,665	.
gs	99232		XXX	Subsequent hospital care	1	o	90	n	6.0	999	27,665	.
im	99232		XXX	Subsequent hospital care	1	s	90	n	6.0	999	27,665	.
ns	99232		XXX	Subsequent hospital care	1	o	90	n	6.0	999	27,665	.
ob	99232		XXX	Subsequent hospital care	1	s	90	n	6.0	999	27,665	.
py	99232		XXX	Subsequent hospital care	1	s	90	n	6.0	999	27,665	.
ga	99233		XXX	Subsequent hospital care	1	s	126	n	6.0	999	2,853	.
gf	99233		XXX	Subsequent hospital care	1	s	126	n	6.0	999	2,853	.
im	99233		XXX	Subsequent hospital care	1	s	126	n	6.0	999	2,853	.
py	99233		XXX	Subsequent hospital care	1	s	126	n	6.0	999	2,853	.
im	99238		XXX	Hospital discharge day	2	s	107		.	.	3,492	.
py	99238		XXX	Hospital discharge day	2	s	107		.	.	3,492	.
ca	99242		XXX	Office consultation	2	s	111	n	6.0	999	421	.
ps	99242		XXX	Office consultation	2	s	111	n	6.0	999	421	.
ur	99242		XXX	Office consultation	2	s	111	n	6.0	999	421	.
gf	99243		XXX	Office consultation	2	s	148	n	6.0	999	481	.
op	99243		XXX	Office consultation	2	s	148	n	6.0	999	481	.
dm	99244		XXX	Office consultation	2	s	223	n	6.0	999	1,545	.
mx	99244		XXX	Office consultation	2	s	223	n	6.0	999	1,545	.
ot	99244		XXX	Office consultation	2	s	223	n	6.0	999	1,545	.
ts	99244		XXX	Office consultation	2	o	223	n	6.0	999	1,545	.
ca	99245		XXX	Office consultation	2	s	296	n	6.0	999	366	.
ga	99245		XXX	Office consultation	2	s	296	n	6.0	999	366	.
gf	99245		XXX	Office consultation	2	s	296	n	6.0	999	366	.
im	99245		XXX	Office consultation	2	s	296	n	6.0	999	366	.
py	99245		XXX	Office consultation	2	s	296	n	6.0	999	366	.
im	99253		XXX	Initial inpatient consult	1	s	157	n	6.0	999	730	.
ga	99254		XXX	Initial inpatient consult	1	o	228	n	6.0	999	4,001	.

Appendix C.1
Specialty reference set: Sorted by Cpt Code
(Harvard RBRVS study -- June, 1993)

Sp	Cpt	Mod	Global surg pack	Description	HCFA ref set	AMA ref set	MFS93 total work	Signif revi-sion	Intra-work % S.E.	Intra-work N	Frequency of claims (000s) 1988 BMAD	Frequency of claims (000s) 1990 HIAA
gs	99254		XXX	Initial inpatient consult	1	o	228	n	6.0	999	4,001	.
im	99254		XXX	Initial inpatient consult	1	s	228	n	6.0	999	4,001	.
ns	99254		XXX	Initial inpatient consult	1	o	228	n	6.0	999	4,001	.
ob	99254		XXX	Initial inpatient consult	1	o	228	n	6.0	999	4,001	.
or	99254		XXX	Initial inpatient consult	1	o	228	n	6.0	999	4,001	.
pa	99254		XXX	Initial inpatient consult	1	s	228	n	6.0	999	4,001	.
ps	99254		XXX	Initial inpatient consult	1	o	228	n	6.0	999	4,001	.
py	99254		XXX	Initial inpatient consult	1	s	228	n	6.0	999	4,001	.
ur	99254		XXX	Initial inpatient consult	1	o	228	n	6.0	999	4,001	.
im	99255		XXX	Initial inpatient consult	1	s	314	n	6.0	999	972	.
py	99255		XXX	Initial inpatient consult	1	s	314	n	6.0	999	972	.
py	99262		XXX	Follow-up inpatient consult	2	s	76	n	6.0	999	1,436	.
py	99263		XXX	Follow-up inpatient consult	2	s	117	n	6.0	999	364	.
py	99275		XXX	Confirmatory consultation	2	s	232		.	.	8	.
gf	99281		XXX	Emergency dept visit	1	s	28	n	6.0	999	614	.
gf	99282		XXX	Emergency dept visit	1	s	49	n	6.0	999	1,499	.
gf	99284		XXX	Emergency dept visit	n	s	169	n	6.0	999	2,568	.
im	99285		XXX	Emergency dept visit	1	s	263	n	6.0	999	2,140	.
py	99285		XXX	Emergency dept visit	1	s	263	n	6.0	999	2,140	.
gf	99301		XXX	Nursing facility care	n	s	107	n	6.0	999	662	.
gf	99303		XXX	Nursing facility care	n	s	229	n	6.0	999	600	.
im	99303		XXX	Nursing facility care	n	s	229	n	6.0	999	600	.
im	99312		XXX	Nursing facility care,subseq	n	s	88	n	6.0	999	3,147	.

Key for Appendix C.1

Global surg pack = global surgical packaging guideline for the 1993 Medicare Fee Schedule:

090 = major surgery - 90 day follow-up
010 = minor or non-incisional procedure - 10 day follow-up
000 = minor or non-incisional procedure - 0 day follow-up
XXX = non-global service

HCFA ref set = designates status as a HCFA reference service as of 11/92:
1 = on primary HCFA Reference Set
2 = on secondary HCFA Reference Set
n = not on primary or secondary HCFA Reference Sets

AMA ref set = designates status as a AMA RUC reference service as of 11/92:
s = on AMA Reference Set for that specialty
o = on AMA Reference Set, but for a different specialty
blank = not on AMA Reference Set

MFS93 total work = Total work value on the 1993 Medicare Fee Schedule. Reported on the Harvard RBRVS scale of work.

Signif revision = designates whether the final phase 3 Harvard RBRVS value has been significantly revised for the 1993 MFS:
i = Harvard value increased by 20 percent or more
d = Harvard value decreased by 20 percent or more
n = Harvard value not revised or revised by less than 20 percent.

% S.E. = standard error for rating of intra-service work from the Harvard RBRVS study, expressed as a percentage of the mean value.

N = number of responses for the rating of intra-service work from the Harvard RBRVS study.

Note: Since the work values for evaluation and mangement services were derived from a regression model and survey responses from more than 1,000 physicians, we use the average standard error (6%) for these services and an N of 999.

1988 BMAD = number of 1988 allowed Medicare Part B claims for the service, in thousands.

1990 HIAA = number of 1990 submitted claims for the service, in thousands, from the Health Insurance Association of America (HIAA) surgical claims summary.

Appendix C.2
Fact Sheet: Time data for selected cardiology reference services

Surgical Reference Services

CPT	Pack	Description	Total Work 1993	Time (mins.) Pre-Before O.R. Entry	Intra	Immediate Pre-Post	Later Same Day Post Visits	Type[b]	Hospital Post-op Hospital Visits	Type[b]	ICU Visits	Office Post-op Visits	Type[b]	Number of Responses[a] Intra	Pre-Post
35301	090	RECHANNELING OF ARTERY	1608	36	120	61	1.5	10	5.0	10	1.0	2.0	15	155	42
32100	090	EXPLORATION/BIOPSY OF CHEST	999	36	92	60	1.5	10	7.0	10	1.0	1.5	20	12	12
92982	000	CORONARY ARTERY DILATION	962	38	80	36*	1.0*	10	NA		NA	NA		62	13
33207	090	INSERTION OF HEART PACEMAKER	723	28	62	42	1.0	10	3.0	10	1.0	1.5	15	155	22
93547	000	HEART CATHETER & ANGIOGRAM	482	30	54	31*	1.0*	10	NA		NA	NA		73	12
92950	000	HEART/LUNGRESUSCITATION/CPR	377	0	51	31*	1.0*	10	NA		NA	NA		107	
93503	000	INSERT/PLACE HEART CATHETER	241	24	34	20*	0.5*	10	NA		NA	NA		268	16
33010	000	DRAINAGE OF HEART SAC	222	14*	24	25	1.0		NA		NA	NA		94	14

Non-Surgical Reference Services

Cpt	Description	Total Work 1993	Intra-time (mins.)	Total time (mins.)	Number of Responses[c] intra	total
93618	HEART RHYTHM PACING	424		60		10
99245	OFFICE CONSULTATION	296	80	109	999	999
99223	INITIAL HOSPITAL CARE	257	70	93	999	999
99222	INITIAL HOSPITAL CARE	184	50	67	999	999

Appendix C.2
Fact Sheet: Time data for selected cardiology reference services (continued)

Non-Surgical Reference Services (continued)

Cpt	Description	Total Work 1993	Intra-time (mins.)	Total time (mins.)	Number of Responses[c] intra	total
99215	OFFICE/OUTPATIENT VISIT, EST	152	40	55	999	999
99242	OFFICE CONSULTATION	111	30	42	999	999
99214	OFFICE/OUTPATIENT VISIT, EST	95	25	35	999	999
93015	CARDIOVASCULAR STRESS TEST	74		34		103
99213	OFFICE/OUTPATIENT VISIT, EST	57	15	21	999	999
93227	ECG MONITOR/REVIEW, 24 HRS	52		16		16
99212	OFFICE/OUTPATIENT VISIT, EST	39	10	14	999	999
71020	CHEST X-RAY	21		5		190
93010	ELECTROCARDIOGRAM REPORT	16		5		204
93014	REPORT ON TRANSMITTED ECG	16		5		15

[a] The average number of responses across all the components of pre-post time estimates.
[b] The type of visit is measured by minutes in increments of five.
[c] The work values for e/m services were derived from a regression model and survey responses from more than 1000 physicians.
* We use a N of 999 for these services.
Time or visit estimate obtained from prediction rather than survey.

Appendix C.2
Fact Sheet: Time data for selected dermatology reference services

Surgical Reference Services

CPT	Pack	Description	Total Work 1993	Time (mins.) Pre-Before O.R. Entry	Intra	Immediate Pre-Post	Later Same Day Post Visits	Type[b]	Hospital Post-op Hospital Visits	Type[b]	ICU Visits	Office Post-op Visits	Type[b]	Number of Responses[a] Intra	Pre-Post
17304	000	CHEMOSURGERY OF SKIN LESION	754	9	50	30*	NA		NA		NA	NA		30	7
14040	090	SKIN TISSUE REARRANGEMENT	713	32*	92	26*	1.0*	10	1.5	15	0.0	4.2	15	128	15
13132	010	REPAIR OF WOUND OR LESION	419	18	50	22	NA		0.0		0.0	1.0	10	102	112
11643	010	REMOVAL OF SKIN LESION	343	10*	47	10*	NA		0.0		0.0	1.0*	10		
11642	010	REMOVAL OF SKIN LESION	286	9	38	9	NA		0.0		0.0	1.0	10	352	14
11441	010	REMOVAL OF SKIN LESION	155	5	19	5	NA		0.0		0.0	1.0	10	259	34
11640	010	REMOVAL OF SKIN LESION	147	6	15	6	NA		0.0		0.0	1.0	10	78	15
11401	010	REMOVAL OF SKIN LESION	126	5*	22	5*	NA		0.0		0.0	1.0*	10	178	
11100	000	BIOPSY OF SKIN LESION	80	5	12	5	NA		NA		NA	NA		252	18
11200	010	REMOVAL OF SKIN TAGS	69	3	11	3	NA		0.0		0.0	1.0*	10	74	14
17000	010	DESTRUCTION OF FACIAL LESION	64	3	6	3	NA		0.0		0.0	0.0		150	14
17100	010	DESTRUCTION OF SKIN LESION	53	3	6	3	NA		0.0		0.0	0.5	10	150	11
11050	000	TRIM SKIN LESION	43	3	9	3	NA		NA		NA	NA		15	13
11201	ZZZ	REMOVAL OF ADDED SKIN TAGS	25	NA	8	NA	NA		NA		NA	NA		74	
17101	ZZZ	DESTRUCTION OF 2ND LESION	11	NA	3	NA	NA		NA		NA	NA		150	

Appendix C.2
Fact Sheet: Time data for selected dermatology reference services (continued)

Non-Surgical Reference Services

Cpt	Description	Total Work 1993	Intra-time (mins.)	Total time (mins.)	Number of Responses[c] intra	total
99244	OFFICE CONSULTATION	223	60	82	999	999
99222	INITIAL HOSPITAL CARE	184	50	67	999	999
99204	OFFICE/OUTPATIENT VISIT, NEW	172	45	63	999	999
99215	OFFICE/OUTPATIENT VISIT, EST	152	40	55	999	999
99203	OFFICE/OUTPATIENT VISIT, NEW	115	30	42	999	999
99232	SUBSEQUENT HOSPITAL CARE	90	25	29	999	999
99202	OFFICE/OUTPATIENT VISIT, NEW	77	20	28	999	999
99213	OFFICE/OUTPATIENT VISIT, EST	57	15	21	999	999
99212	OFFICE/OUTPATIENT VISIT, EST	39	10	14	999	999

[a] The average number of responses across all the components of pre-post time estimates.
[b] The type of visit is measured by minutes in increments of five.
[c] The work values for e/m services were derived from a regression model and survey responses from more than 1000 physicians.
* We use a N of 999 for these services.
Time or visit estimate obtained from prediction rather than survey.

Appendix C.2
Fact Sheet: Time data for selected gastroenterology reference services

Surgical Reference Services

CPT	Pack	Description	Total Work 1993	Time (mins.) Pre-Before O.R. Entry	Intra	Immediate Pre-Post	Later Same Day Post Visits	Type[b]	Hospital Post-op Hospital Visits	Type[b]	ICU Visits	Office Post-op Visits	Type[b]	Number of Responses[a] Intra	Pre-Post
43832	090	PLACE GASTROSTOMY TUBE	1060	32*	72	43	0.5	10	7.5*	10	0.0	3.5*	10	25	25
43262	000	ENDOSCOPY,BILE DUCT/PANCREAS	734	25	75	35*	0.5*	10	NA		NA	NA		76	17
43260	000	ENDOSCOPY,BILE DUCT/PANCREAS	592	22	48	31*	0.5*	10	NA		NA	NA		90	93
45385	000	COLONOSCOPY, LESION REMOVAL	516	17	53	32*	0.5*	5	NA		NA	NA		161	39
43255	000	OPERATIVE UPPER GI ENDOSCOPY	437	18	42	29*	0.5*	5	NA		NA	NA		105	21
45380	000	COLONOSCOPY AND BIOPSY	397	16	42	29*	0.5*	5	NA		NA	NA		107	21
45378	000	DIAGNOSTIC COLONOSCOPY	367	20	39	29*	0.5*	5	NA		NA	NA		157	112
43239	000	UPPER GI ENDOSCOPY, BIOPSY	267	16	25	24*	0.5*	5	NA		NA	NA		104	21
43235	000	UPPER GI ENDOSCOPY,DIAGNOSIS	237	18	29	26*	0.5*	5	NA		NA	NA		128	112
43450	000	DILATE ESOPHAGUS	138	13*	19	15*	0.5*	5	NA		NA	NA		103	
45305	000	PROCTOSIGMOIDOSCOPY; BIOPSY	100	5	16	5	NA		NA		NA	NA		19	19
45330	000	SIGMOIDOSCOPY, DIAGNOSTIC	95	7	15	7	NA		NA		NA	NA		175	21

Appendix C.2
Fact Sheet: Time data for selected gastroenterology reference services

Non-Surgical Reference Services

Cpt	Description	Total Work 1993	Intra-time (mins.)	Total time (mins.)	Number of Responses[c] intra	total
99245	OFFICE CONSULTATION	296	80	109	999	999
99223	INITIAL HOSPITAL CARE	257	70	93	999	999
99205	OFFICE/OUTPATIENT VISIT, NEW	229	60	83	999	999
99254	INITIAL INPATIENT CONSULT	228	65	80	999	999
99222	INITIAL HOSPITAL CARE	184	50	67	999	999
99204	OFFICE/OUTPATIENT VISIT, NEW	172	45	63	999	999
91010	ESOPHAGUS MOTILITY STUDY	164		36		12
99215	OFFICE/OUTPATIENT VISIT, EST	152	40	55	999	999
99233	SUBSEQUENT HOSPITAL CARE	126	35	40	999	999
99214	OFFICE/OUTPATIENT VISIT, EST	95	25	35	999	999
99232	SUBSEQUENT HOSPITAL CARE	90	25	29	999	999
99213	OFFICE/OUTPATIENT VISIT, EST	57	15	21	999	999
99231	SUBSEQUENT HOSPITAL CARE	54	15	18	999	999
99212	OFFICE/OUTPATIENT VISIT, EST	39	10	14	999	999

[a] The average number of responses across all the components of pre-post time estimates.
[b] The type of visit is measured by minutes in increments of five.
[c] The work values for e/m services were derived from a regression model and survey responses from more than 1000 physicians. We use a N of 999 for these services.
* Time or visit estimate obtained from prediction rather than survey.

Appendix C.2
Fact Sheet: Time data for selected general/family practice reference services

Surgical Reference Services

CPT	Pack	Description	Total Work 1993	Time (mins.) Pre-Before O.R. Entry	Intra	Immediate Pre-Post	Later Same Day Post Visits	Type[b]	Hospital Post-op Hospital Visits	Type[b]	ICU Visits	Office Post-op Visits	Type[b]	Number of Responses[a] Intra	Pre-Post
45380	000	COLONOSCOPY AND BIOPSY	397	16	42	29*	0.5*	5	NA		NA	NA		107	21
92950	000	HEART/LUNGRESUSCITATION/CPR	377	0	51	31*	1.0*	10	NA		NA	NA		107	
43235	000	UPPER GI ENDOSCOPY,DIAGNOSIS	237	18	29	26*	0.5*	5	NA		NA	NA		128	112
47000	000	NEEDLE BIOPSY OF LIVER	189	20	26	14	0.5*	10	NA		NA	NA		104	7
11401	010	REMOVAL OF SKIN LESION	126	5*	22	5*	NA		0.0		0.0	1.0*	10	178	
62270	000	SPINAL FLUID TAP, DIAGNOSTIC	111	7	21	7	NA		NA		NA	NA		305	13
20610	000	DRAIN/INJECT JOINT/BURSA	78	7	15	7	NA		NA		NA	NA		583	9
11200	010	REMOVAL OF SKIN TAGS	69	3	11	3	NA		0.0		0.0	1.0*	10	74	14

Non-Surgical Reference Services

Cpt	Description	Total Work 1993	Intra-time (mins.)	Total time (mins.)	Number of Responses[c] intra	total
99245	OFFICE CONSULTATION	296	80	109	999	999
99223	INITIAL HOSPITAL CARE	257	70	93	999	999
99303	NURSING FACILITY CARE	229	50	54	999	999
99204	OFFICE/OUTPATIENT VISIT, NEW	172	45	63	999	999
99284	EMERGENCY DEPT VISIT	169		40	999	999
99215	OFFICE/OUTPATIENT VISIT, EST	152	40	55	999	999

Appendix C.2
Fact Sheet: Time data for selected general/family practice reference services (continued)

Non-Surgical Reference Services (continued)

Cpt	Description	Total Work 1993	Intra-time (mins.)	Total time (mins.)	Number of Responses[c] intra	total
99243	OFFICE CONSULTATION	148	40	55	999	999
99233	SUBSEQUENT HOSPITAL CARE	126	35	40	999	999
99203	OFFICE/OUTPATIENT VISIT, NEW	115	30	42	999	999
99301	NURSING FACILITY CARE	107	30	32	999	999
99214	OFFICE/OUTPATIENT VISIT, EST	95	25	35	999	999
93015	CARDIOVASCULAR STRESS TEST	74		34		103
99213	OFFICE/OUTPATIENT VISIT, EST	57	15	21	999	999
99231	SUBSEQUENT HOSPITAL CARE	54	15	18	999	999
99282	EMERGENCY DEPT VISIT	49		15	999	999
76091	MAMMOGRAM, BOTH BREASTS	41		8		112
99201	OFFICE/OUTPATIENT VISIT, NEW	39	10	14	999	999
99281	EMERGENCY DEPT VISIT	28		10	999	999
99211	OFFICE/OUTPATIENT VISIT, EST	18	5	7	999	999
71010	CHEST X-RAY	17		5		102

[a] The average number of responses across all the components of pre-post time estimates.
[b] The type of visit is measured by minutes in increments of five.
[c] The work values for e/m services were derived from a regression model and survey responses from more than 1000 physicians.
[*] We use a N of 999 for these services.
Time or visit estimate obtained from prediction rather than survey.

Appendix C.2
Fact Sheet: Time data for selected general surgery reference services

Surgical Reference Services

CPT	Pack	Description	Total Work 1993	Time (mins.) Pre-Before O.R. Entry	Intra	Immediate Pre-Post	Later Same Day Post Visits	Type[b]	Hospital Post-op Hospital Visits	Type[b]	ICU Visits	Office Post-op Visits	Type[b]	Number of Responses[a] Intra	Pre-Post
48150	090	PARTIAL REMOVAL OF PANCREAS	2999	45	309	78	1.5	15	16.0	15	2.0	5.0	15	12	17
35641	090	ARTERY BYPASS GRAFT	2250	39	190	67	1.5	10	11.0	10	1.0	4.0	15	36	20
35081	090	REPAIR DEFECT OF ARTERY	2200	29	167	77	1.5	10	10.0	10	2.0	1.5	20	81	26
45110	090	REMOVAL OF RECTUM	2152	37	194	72	1.5	10	13.0	10	1.0	5.5	15	97	25
44150	090	REMOVAL OF COLON	1890	44	157	64	1.5	10	11.0	10	0.0	4.5	15		26
44140	090	PARTIAL REMOVAL OF COLON	1696	33	104	58	1.0	10	8.5	10	0.0	3.5	10	99	25
35301	090	RECHANNELING OF ARTERY	1608	36	120	61	1.5	10	5.0	10	1.0	2.0	15	155	42
60500	090	EXPLORE PARATHYROID GLANDS	1529	40	138	54	1.0	10	4.5	10	0.0	3.0	10	90	24
19240	090	REMOVAL OF BREAST	1460	37*	104	55	1.0	10	5.0	10	0.0	5.5	15	199	34
47610	090	REMOVAL OF GALLBLADDER	1375	31	115	51	1.0	10	4.5	10	0.0	3.0	10	18	21
44120	090	REMOVAL OF SMALL INTESTINE	1306	31	95	53	1.0	10	8.5	10	0.0	3.0	10	98	26
58150	090	TOTAL HYSTERECTOMY	1290	35	89	47	1.0	10	4.5	15	0.0	2.5	15	176	48
38100	090	REMOVAL OF SPLEEN, TOTAL	1190	32*	91	53	1.0	10	6.0	10	0.0	3.0*	10	98	51
43832	090	PLACE GASTROSTOMY TUBE	1060	32*	72	43	0.5	10	7.5*	10	0.0	3.5*	10	25	25
47600	090	REMOVAL OF GALLBLADDER	1060	22	64	46	1.0	10	4.0	10	0.0	2.5*	10	197	70

Appendix C.2
Fact Sheet: Time data for selected general surgery reference services (continued)

Surgical Reference Services

CPT	Pack	Description	Total Work 1993	Time (mins.) Pre-Before O.R. Entry	Intra	Immediate Pre-Post	Later Same Day Post Visits	Later Same Day Post Type[b]	Hospital Post-op Hospital Visits	Hospital Post-op Type[b]	Hospital Post-op ICU Visits	Office Post-op Visits	Office Post-op Type[b]	Number of Responses[a] Intra	Number of Responses[a] Pre-Post
27590	090	AMPUTATE LEG AT THIGH	1017	23*	69	48	1.0	10	11.5	10	0.0	4.0	10	155	23
60220	090	PARTIAL REMOVAL OF THYROID	979	39	97	54	1.0	10	3.5	10	0.0	2.5	10	14	17
34101	090	REMOVAL OF ARTERY CLOT	867	22	68	50	1.5	10	6.5	10	1.0	2.5	10	45	20
15100	090	SKIN SPLIT GRAFT PROCEDURE	800	39	73	48	1.0	10	3.5	15	0.0	4.5	15	193	35
36830	090	ARTERY-VEIN GRAFT	772	22	92	39	1.0	10	4.0	10	0.0	2.5	10	52	17
46260	090	HEMORRHOIDECTOMY	665	24	53	35	0.5	10	2.5*	10	0.0	3.5	10	98	51
49505	090	REPAIR INGUINAL HERNIA	612	22	48	37	0.5	10	1.0	10	0.0	2.0	10	274	39
44950	090	APPENDECTOMY	602	31	37	40	1.0	10	2.5	10	0.0	2.0*	10	146	31
19140	090	REMOVAL OF BREAST TISSUE	487	24*	50	38	0.5	10	0.5*	10	0.0	3.5*	10	31	24
19120	090	REMOVAL OF BREAST LESION	480	23	35	39	0.5	10	0.5	10	0.0	2.5	15	101	58
46934	090	DESTRUCTION OF HEMORRHOIDS	381	15	45	17	NA		0.0		0.0	2.5	10	13	10
31625	000	BRONCHOSCOPY WITH BIOPSY	334	19	43	25	0.5	10	NA		NA	NA		93	14
36800	000	INSERTION OF CANNULA	241	8	35	25	0.5	10	NA		NA	NA		95	16
12011	010	REPAIR SUPERFICIAL WOUND(S)	170	6	22	6	NA		0.0		0.0	1.0	10	164	19
20220	000	BONE BIOPSY, TROCAR/NEEDLE	126	14	22	25	0.5	5	NA		NA	NA		16	16

Appendix C.2
Fact Sheet: Time data for selected general surgery reference services

Non-Surgical Reference Services

Cpt	Description	Total Work 1993	Intra-time (mins.)	Total time (mins.)	Number of Responses[c] intra	total
99254	INITIAL INPATIENT CONSULT	228	65	80	999	999
99232	SUBSEQUENT HOSPITAL CARE	90	25	29	999	999
99213	OFFICE/OUTPATIENT VISIT, EST	57	15	21	999	999

[a] The average number of responses across all the components of pre-post time estimates.
[b] The type of visit is measured by minutes in increments of five.
[c] The work values for e/m services were derived from a regression model and survey responses from more than 1000 physicians.
We use a N of 999 for these services.
* Time or visit estimate obtained from prediction rather than survey.

Appendix C.2
Fact Sheet: Time data for selected internal medicine reference services

Surgical Reference Services

CPT	Pack	Description	Total Work 1993	Time (mins.) Pre-Before O.R. Entry	Intra	Immediate Pre-Post	Later Same Day Post Visits	Type[b]	Hospital Post-op Hospital Visits	Type[b]	ICU Visits	Office Post-op Visits	Type[b]	Number of Responses[a] Intra	Pre-Post
32020	000	INSERTION OF CHEST TUBE	394	14	24	31	1.0	10	NA		NA	NA		370	20
92950	000	HEART/LUNGRESUSCITATION/CPR	377	0	51	31*	1.0*	10	NA		NA	NA		107	
31500	000	INSERT OF EMERGENCY AIRWAY	232	7	10	7	0.5*	10	NA		NA	NA		293	10
32000	000	DRAINAGE OF CHEST	153	10	28	20	1.0	5	NA		NA	NA		359	12
62270	000	SPINAL FLUID TAP, DIAGNOSTIC	111	7	21	7	NA		NA		NA	NA		305	13
45330	000	SIGMOIDOSCOPY, DIAGNOSTIC	95	7	15	7	NA		NA		NA	NA		175	21
11200	010	REMOVAL OF SKIN TAGS	69	3	11	3	NA		0.0		0.0	1.0*	10	74	14

Non-Surgical Reference Services

Cpt	Description	Total Work 1993	Intra-time (mins.)	Total time (mins.)	Number of Responses[c] intra	total
99255	INITIAL INPATIENT CONSULT	314	88	110	999	999
99245	OFFICE CONSULTATION	296	80	109	999	999
99285	EMERGENCY DEPT VISIT	263		50	999	999
99223	INITIAL HOSPITAL CARE	257	70	93	999	999
99205	OFFICE/OUTPATIENT VISIT, NEW	229	60	83	999	999
99303	NURSING FACILITY CARE	229	50	54	999	999

Appendix C.2
Fact Sheet: Time data for selected internal medicine reference services

Non-Surgical Reference Services (continued)

Cpt	Description	Total Work 1993	Intra-time (mins.)	Total time (mins.)	Number of Responses[c] intra	total
99254	INITIAL INPATIENT CONSULT	228	65	80	999	999
99222	INITIAL HOSPITAL CARE	184	50	67	999	999
99253	INITIAL INPATIENT CONSULT	157	45	55	999	999
99215	OFFICE/OUTPATIENT VISIT, EST	152	40	55	999	999
99233	SUBSEQUENT HOSPITAL CARE	126	35	40	999	999
99203	OFFICE/OUTPATIENT VISIT, NEW	115	30	42	999	999
99238	HOSPITAL DISCHARGE DAY	108		35	999	999
99232	SUBSEQUENT HOSPITAL CARE	90	25	29	999	999
99312	NURSING FACILITY CARE,SUBSEQ	88	25	27	999	999
93015	CARDIOVASCULAR STRESS TEST	74		34		103
99213	OFFICE/OUTPATIENT VISIT, EST	57	15	21	999	999
99212	OFFICE/OUTPATIENT VISIT, EST	39	10	14	999	999
71020	CHEST X-RAY	21		5		190
99211	OFFICE/OUTPATIENT VISIT, EST	18	5	7	999	999
71010	CHEST X-RAY	17		5		102
93010	ELECTROCARDIOGRAM REPORT	16		5		204

[a] The average number of responses across all the components of pre-post time estimates.
[b] The type of visit is measured by minutes in increments of five.
[c] The work values for e/m services were derived from a regression model and survey responses from more than 1000 physicians.
We use a N of 999 for these services.
* Time or visit estimate obtained from prediction rather than survey.

Appendix C.2
Fact Sheet: Time data for selected oral & maxillofacial surgery reference services

Surgical Reference Services

				Time (mins.)											
				Pre-Before			Later Same Day Post		Hospital Post-op			Office Post-op		Number of Responses[a]	
CPT	Pack	Description	Total Work 1993	O.R. Entry	Intra	Immediate Pre-Post	Visits	Type[b]	Hospital Visits	Type[b]	ICU Visits	Visits	Type[b]	Intra	Pre-Post
21155	090	RECONSTRUCT MIDFACE, LEFORT3	3580	79	449	88	1.0	20	5.0	15	2.0	8.0	15	15	7
21147	090	RECONSTRUCT MIDFACE, LEFORT1	2016	46	252	67	1.0	15	3.5	15	1.0	6.5	15	24	13
21145	090	RECONSTRUCT MIDFACE, LEFORT1	1878	43	202	64	1.0	15	2.5	15	0.0	6.0	15	24	13
21249	090	RECONSTRUCTION OF JAW	1700	25	145	33	0.5*		0.0		0.0	4.0	15	22	10
21470	090	REPAIR LOWER JAW FRACTURE	1409	37	177	67	1.0	15	3.5	15	0.0	6.0	15	24	24
21365	090	REPAIR CHEEK BONE FRACTURE	1388	32	138	68	1.0	15	3.0	15	0.0	5.0	15	24	23
21240	090	RECONSTRUCTION OF JAW JOINT	1301	30	137	62	1.0	15	2.0	15	0.0	6.0	15	24	23
21248	090	RECONSTRUCTION OF JAW	1100	23	76	32	0.5*		0.0		0.0	4.0	15	22	10
21215	090	LOWER JAW BONE GRAFT	999	30	155	68	1.0	15	2.5	15	0.0	5.0	15	24	22
21210	090	FACE BONE GRAFT	950	28	131	67	1.0	15	2.0	15	0.0	4.0	15	24	21
21462	090	REPAIR LOWER JAW FRACTURE	908	25	107	56	1.0	15	2.0	15	0.0	5.0	15	24	23
21030	090	REMOVAL OF FACE BONE LESION	700	22	51	51	1.0	10	1.0	15	0.0	3.0	10	24	23
21041	090	REMOVAL OF JAW BONE LESION	500	25	82	56	1.0	10	2.0	15	0.0	4.0	15	24	23
21110	090	INTERDENTAL FIXATION	500	16	62	30	NA		0.0		0.0	4.0	15	24	10
21485	090	RESET DISLOCATED JAW	370	15	50	30	NA		0.0		0.0	2.5	15	24	11

Appendix C.2
Fact Sheet: Time data for selected oral & maxillofacial surgery reference services (continued)

Surgical Reference Services

CPT	Pack	Description	Total Work 1993	Time (mins.) Pre-Before O.R. Entry	Intra	Immediate Pre-Post	Later Same Day Post Visits	Type[b]	Hospital Post-op Hospital Visits	Type[b]	ICU Visits	Office Post-op Visits	Type[b]	Number of Responses[a] Intra	Pre-Post
21040	090	REMOVAL OF JAW BONE LESION	200	15	37	29	NA		0.0		0.0	3.5	15	24	11
21315	010	TREATMENT OF NOSE FRACTURE	141	15	34	18	NA		0.0		0.0	1.0	10	19	12
21480	000	RESET DISLOCATED JAW	61	12	20	18	NA		NA		NA	NA		24	13
21310	000	TREATMENT OF NOSE FRACTURE	58	15	29	18	NA		NA		NA	NA		19	12

Non-Surgical Reference Services

Cpt	Description	Total Work 1993	Intra-time (mins.)	Total time (mins.)	Number of Responses[c] intra	total
99244	OFFICE CONSULTATION	223	60	82	999	999
99203	OFFICE/OUTPATIENT VISIT, NEW	115	30	42	999	999
99213	OFFICE/OUTPATIENT VISIT, EST	57	15	21	999	999
99231	SUBSEQUENT HOSPITAL CARE	54	15	18	999	999

[a] The average number of responses across all the components of pre-post time estimates.
[b] The type of visit is measured by minutes in increments of five.
[c] The work values for e/m services were derived from a regression model and survey responses from more than 1000 physicians.
* We use a N of 999 for these services.
Time or visit estimate obtained from prediction rather than survey.

Appendix C.2
Fact Sheet: Time data for selected neurosurgery reference services

Surgical Reference Services

CPT	Pack	Description	Total Work 1993	Time (mins.) Pre-Before O.R. Entry	Intra	Immediate Pre-Post	Later Same Day Post Visits	Type[b]	Hospital Post-op Hospital Visits	Type[b]	ICU Visits	Office Post-op Visits	Type[b]	Number of Responses[a] Intra	Pre-Post
61520	090	REMOVAL OF BRAIN LESION	3808	50	374	81	1.5	15	9.0	15	1.0	2.5	15	18	15
61700	090	INNER SKULL VESSEL SURGERY	3458	57	280	74	1.5	10	12.0	15	1.0	3.0	15	108	17
61518	090	REMOVAL OF BRAIN LESION	3204	49	299	79	1.5	10	11.0	15	1.0	3.0	15	108	17
61512	090	REMOVE BRAIN LINING LESION	2408	47	241	67	1.0	15	8.5	15	1.0	2.5	15	112	17
61510	090	REMOVAL OF BRAIN LESION	2322	52	219	62	1.0	15	8.5	15	1.0	2.5	15	108	17
22558	090	LUMBAR SPINE FUSION	2196	35	217	58	1.0	10	6.0	10	1.0	2.5	15	11	14
61312	090	OPEN SKULL FOR DRAINAGE	2039	42	150	58	1.0	10	10.5	15	1.0	2.5	15	111	38
22554	090	NECK SPINE FUSION	1801	34	142	56	1.0	10	5.5	10	1.0	2.5	15	17	17
63042	090	LOW BACK DISK SURGERY	1714	35	159	50	1.0	10	6.5	10	0.0	2.5	15	199	17
35301	090	RECHANNELING OF ARTERY	1608	36	120	61	1.5	10	5.0	10	1.0	2.0	15	155	42
63017	090	REMOVAL OF SPINAL LAMINA	1574	36	168	60	1.0	10	7.0	10	0.0	3.0	15	278	40
61154	090	PIERCE SKULL, REMOVE CLOT	1357	35	69	53	1.0	10	7.5	15	1.0	2.5	15	110	38
63047	090	REMOVAL OF SPINAL LAMINA	1267	34	121	52	1.0	10	5.5	10	0.0	2.0	15	17	15
63030	090	LOW BACK DISK SURGERY	1202	33	91	48	1.0	10	5.5	10	0.0	2.5	15	292	34
63780	090	INSERT SPINAL CANAL CATHETER	617	28	71	46	1.0	10	3.5	10	0.0	1.5	10	10	12

Appendix C.2
Fact Sheet: Time data for selected neurosurgery reference services (continued)

Surgical Reference Services

CPT	Pack	Description	Total Work 1993	Time (mins.) Pre-Before O.R. Entry	Intra	Immediate Pre-Post	Later Same Day Post Visits	Type[b]	Hospital Post-op Hospital Visits	Type[b]	ICU Visits	Office Post-op Visits	Type[b]	Number of Responses[a] Intra	Pre-Post
64721	090	CARPAL TUNNEL SURGERY	395	22	35	36	0.5	10	0.0		0.0	3.5	10	529	93
64421	010	INJECTION FOR NERVE BLOCK	205	15	35	15	NA		0.0		0.0	1.0	10	11	3
62284	000	INJECTION FOR MYELOGRAM	153	14	25	10	NA		NA		NA	NA		89	11
64400	010	INJECTION FOR NERVE BLOCK	132	15	30	15	NA		0.0		0.0	0.5	10	10	6
62270	000	SPINAL FLUID TAP, DIAGNOSTIC	111	7	21	7	NA		NA		NA	NA		305	13

Non-Surgical Reference Services

Cpt	Description	Total Work 1993	Intra-time (mins.)	Total time (mins.)	Number of Responses[c] intra	total
99254	INITIAL INPATIENT CONSULT	228	65	80	999	999
99204	OFFICE/OUTPATIENT VISIT, NEW	172	45	63	999	999
99232	SUBSEQUENT HOSPITAL CARE	90	25	29	999	999
99213	OFFICE/OUTPATIENT VISIT, EST	57	15	21	999	999
99231	SUBSEQUENT HOSPITAL CARE	54	15	18	999	999

[a] The average number of responses across all the components of pre-post time estimates.
[b] The type of visit is measured by minutes in increments of five.
[c] The work values for e/m services were derived from a regression model and survey responses from more than 1000 physicians.
We use a N of 999 for these services.
* Time or visit estimate obtained from prediction rather than survey.

Appendix C.2
Fact Sheet: Time data for selected obstetrics/gynecology reference services

Surgical Reference Services

CPT	Pack	Description	Total Work 1993	Time (mins.) Pre-Before O.R. Entry	Intra	Immediate Pre-Post	Later Same Day Post Visits	Type[b]	Hospital Post-op Hospital Visits	Type[b]	ICU Visits	Office Post-op Visits	Type[b]	Number of Responses[a] Intra	Pre-Post
58240	090	REMOVAL OF PELVIS CONTENTS	2858	46	300	73*	1.0*	15	10.0	20	3.0	4.0	20	6	7
58210	090	EXTENSIVE HYSTERECTOMY	2380	39	192	62*	1.0*	15	8.5	15	2.0	3.5	15	11	8
58951	090	RESECT OVARIAN MALIGNANCY	2020	39*	159	58*	1.0*	10	6.5*	15	1.0	3.5*	15	10	
56640	090	EXTENSIVE VULVA SURGERY	1884	40*	154	58*	1.0*	10	12.0*	15	1.0	2.5*	15	10	
58152	090	TOTAL HYSTERECTOMY	1400	35	113	45	1.0	10	5.0	15	0.0	2.5	15	17	16
58950	090	RESECT OVARIAN MALIGNANCY	1400	37	116	51	1.0	15	5.0	15	1.0	2.5	15	11	14
58150	090	TOTAL HYSTERECTOMY	1290	35	89	47	1.0	10	4.5	15	0.0	2.5	15	176	48
59410	MMM	OBSTETRICAL CARE	1214	20*	35	41	1.0	10	2.0	15	0.0	1.5	15	157	15
58260	090	VAGINAL HYSTERECTOMY	1131	30	70	42	1.0	10	4.0	15	0.0	2.0	15	17	16
57280	090	SUSPENSION OF VAGINA	829	36	67	48	1.0	10	4.0	15	0.0	2.5	15	14	13
57260	090	REPAIR OF VAGINA	753	30	61	42	1.0	10	4.0	15	0.0	2.5	15	18	17
58940	090	REMOVAL OF OVARY(S)	649	22	54	42	1.0	10	3.5	10	0.0	2.0	15	14	15
58720	090	REMOVAL OF OVARY/TUBE(S)	615	22	52	41	1.0	10	3.0	10	0.0	2.0	15	17	16
57240	090	REPAIR BLADDER & VAGINA	535	27	45	42	1.0	10	3.0	10	0.0	2.0	10	16	16
57520	090	CONIZATION CERVIX	339	22	26	35	0.5	10	0.0		0.0	1.5	10	19	17
58120	010	DILATION AND CURETTAGE (D&C)	243	22	13	29	0.5	5	0.0		0.0	1.0	5	89	67

Appendix C.2
Fact Sheet: Time data for selected obstetrics/gynecology reference services (continued)

Surgical Reference Services

CPT	Pack	Description	Total Work 1993	Time (mins.) Pre-Before O.R. Entry	Intra	Immediate Pre-Post	Later Same Day Post Visits	Later Same Day Post Type[b]	Hospital Post-op Hospital Visits	Hospital Post-op Type[b]	Hospital Post-op ICU Visits	Office Post-op Visits	Office Post-op Type[b]	Number of Responses[a] Intra	Number of Responses[a] Pre-Post
56420	010	DRAINAGE OF GLAND ABSCESS	133	13*	15	13*	NA		NA		NA	0.5	10	17	13
57454	000	VAGINA EXAMINATION & BIOPSY	126	14	28	14	NA		NA		NA	NA		82	12
57500	000	BIOPSY OF CERVIX	96	7	16	7	NA		NA		NA	NA		15	13
58100	000	BIOPSY OF UTERUS LINING	71	8	10	8	NA		NA		NA	NA		17	12

Non-Surgical Reference Services

Cpt	Description	Total Work 1993	Intra-time (mins.)	Total time (mins.)	Number of Responses[c] intra	total
99205	OFFICE/OUTPATIENT VISIT, NEW	229	60	83	999	999
99254	INITIAL INPATIENT CONSULT	228	65	80	999	999
99215	OFFICE/OUTPATIENT VISIT, EST	152	40	55	999	999
99232	SUBSEQUENT HOSPITAL CARE	90	25	29	999	999
99213	OFFICE/OUTPATIENT VISIT, EST	57	15	21	999	999
99231	SUBSEQUENT HOSPITAL CARE	54	15	18	999	999
99212	OFFICE/OUTPATIENT VISIT, EST	39	10	14	999	999

[a] The average number of responses across all the components of pre-post time estimates.
[b] The type of visit is measured by minutes in increments of five.
[c] The work values for e/m services were derived from a regression model and survey responses from more than 1000 physicians.
* We use a N of 999 for these services.
Time or visit estimate obtained from prediction rather than survey.

Appendix C.2
Fact Sheet: Time data for selected ophthalmology reference services

Surgical Reference Services

CPT	Pack	Description	Total Work 1993	Time (mins.) Pre-Before O.R. Entry	Intra	Immediate Pre-Post	Later Same Day Post Visits	Type[b]	Hospital Post-op Hospital Visits	Type[b]	ICU Visits	Office Post-op Visits	Type[b]	Number of Responses[a] Intra	Pre-Post
67108	090	REPAIR DETACHED RETINA	1976	40*	195	42	1.0	10	1.0	20	0.0	5.0	20	36	27
67107	090	REPAIR DETACHED RETINA	1390	27	107	41	1.0	10	1.0	20	0.0	4.5	20	152	29
67228	090	TREATMENT OF RETINAL LESION	1230	19	69	25	0.5	10	0.0		0.0	3.5	15	187	48
65285	090	REPAIR OF EYE WOUND	1197	37	79	47	1.0	10	1.5	15	0.0	6.0	15	124	28
67036	090	REMOVAL OF INNER EYE FLUID	1125	26	76	38	0.5	10	0.5	20	0.0	4.5	20	84	27
66984	090	REMOVE CATARACT, INSERT LENS	982	25	54	34	0.5	10	0.0		0.0	5.5	15	346	153
66983	090	REMOVE CATARACT, INSERT LENS	848	23	52	33	0.5	10	0.0		0.0	4.5	15	146	18
66985	090	INSERT LENS PROSTHESIS	784	25	40	33	0.5	10	0.0		0.0	5.0	15	297	108
67010	090	PARTIAL REMOVAL OF EYE FLUID	662	20	45	35	0.5	10	0.0		0.0	4.0	10	163	15
67227	090	TREATMENT OF RETINAL LESION	623	27	61	29	0.5	10	0.0		0.0	3.0	15	29	11
65855	090	LASER SURGERY OF EYE	461	18	23	19	1.0	10	0.0		0.0	3.0	15	201	77
66761	090	REVISION OF IRIS	374	20	21	18	0.5	5	0.0		0.0	3.0	15	206	55
66821	090	LASERING, SECONDARY CATARACT	276	11	15	17	0.5	10	0.0		0.0	2.5	10	252	17
67840	010	REMOVE EYELID LESION	198	10	36	10	NA		0.0		0.0	1.0	10	171	20
68840	010	EXPLORE/IRRIGATE TEAR DUCTS	121	7	13	7	NA		0.0		0.0	0.5	10	13	22
67515	000	INJECT/TREAT EYE SOCKET	61	8	6	8	NA		NA		NA	NA		13	26

Appendix C.2
Fact Sheet: Time data for selected ophthalmology reference services

Non-Surgical Reference Services

Cpt	Description	Total Work 1993	Intra-time (mins.)	Total time (mins.)	Number of Responses[c] intra	total
92004	EYE EXAM, NEW PATIENT	160	36	52	170	171
99243	OFFICE CONSULTATION	148	40	55	999	999
92012	EYE EXAM,ESTABLISHED PATIENT	81	20	32	256	211
92225	SPECIAL EYE EXAM, INITIAL	58		26		83
99213	OFFICE/OUTPATIENT VISIT, EST	57	15	21	999	999
92083	VISUAL FIELD EXAMINATION(S)	50		17		45
92285	EYE PHOTOGRAPHY	19		16		17

[a] The average number of responses across all the components of pre-post time estimates.
[b] The type of visit is measured by minutes in increments of five.
[c] The work values for e/m services were derived from a regression model and survey responses from more than 1000 physicians.
* We use a N of 999 for these services.
Time or visit estimate obtained from prediction rather than survey.

Appendix C.2
Fact Sheet: Time data for selected orthopedic surgery reference services

Surgical Reference Services

				Time (mins.)										
				Pre-Before			Later Same Day Post		Hospital Post-op			Office Post-op		Number of Responses[a]	
CPT	Pack	Description	Total Work 1993	O.R. Entry	Intra	Immediate Pre-Post	Visits	Type[b]	Hospital Visits	Type[b]	ICU Visits	Visits	Type[b]	Intra	Pre-Post
22812	090	FUSION OF SPINE	2700	49*	304	73*	1.5*	10	12.0*	10	0.0	4.0*	15	3	
22141	090	RECONSTRUCT THORAX SPINE	2526	39*	135	55*	1.0*	10	8.0*	10	1.0	3.0*	10	3	
27132	090	TOTAL HIP REPLACEMENT	2129	32	194	61	1.0	10	10.5	10	0.0	4.0	15	147	13
27091	090	REMOVAL OF HIP PROSTHESIS	2033	41	178	63	1.0	10	9.0	10	0.0	4.0	15	69	11
27447	090	TOTAL KNEE REPLACEMENT	1955	30	139	57	1.0	10	10.0	10	0.0	4.0	15	149	28
27130	090	TOTAL HIP REPLACEMENT	1855	31	128	59	1.0	10	9.0	10	0.0	3.5	10	104	29
23472	090	RECONSTRUCT SHOULDER JOINT	1597	32	142	56	1.0	10	5.0	10	0.0	4.0	10	52	10
63017	090	REMOVAL OF SPINAL LAMINA	1574	36	168	60	1.0	10	7.0	10	0.0	3.0	15	278	40
27236	090	REPAIR OF THIGH FRACTURE	1404	27	89	62	1.0	10	9.0	10	0.0	4.0	10	151	12
27244	090	REPAIR OF THIGH FRACTURE	1349	32	79	64	1.0	10	10.0	10	0.0	4.0	10	259	38
27125	090	PARTIAL HIP REPLACEMENT	1312	27	84	57	1.0	10	8.0	10	0.0	3.5	15	155	12
24515	090	REPAIR HUMERUS FRACTURE	1084	24	106	56	1.0	10	3.0	10	0.0	5.0	10	76	13
27524	090	REPAIR OF KNEECAP FRACTURE	930	19	78	46	0.5	10	2.5	10	0.0	4.0	10	11	10
27310	090	EXPLORATION OF KNEE JOINT	820	19	54	46	1.0	10	5.5	10	0.0	4.0	10	11	10
29881	090	KNEE ARTHROSCOPY/SURGERY	740	26	66	46	0.5	10	0.0		0.0	3.0	15	247	23

Appendix C.2
Fact Sheet: Time data for selected orthopedic surgery reference services (continued)

Surgical Reference Services

				Time (mins.)										
				Pre-Before			Later Same Day Post		Hospital Post-op			Office Post-op		Number of Responses[a]	
CPT	Pack	Description	Total Work 1993	O.R. Entry	Intra	Immediate Pre-Post	Visits	Type[b]	Hospital Visits	Type[b]	ICU Visits	Visits	Type[b]	Intra	Pre-Post
28292	090	CORRECTION OF BUNION	619	26	56	47	0.5	10	1.0	10	0.0	5.0	10	102	22
25605	090	TREAT FRACTURE RADIUS/ULNA	538	22	35	34	0.5	5	0.0		0.0	5.0	15	153	47
27425	090	LATERAL RETINACULAR RELEASE	501	25	37	44	0.5	5	0.5	10	0.0	3.5	10	13	9
64721	090	CARPAL TUNNEL SURGERY	395	22	35	36	0.5	10	0.0		0.0	3.5	10	529	93
25111	090	REMOVE WRIST TENDON LESION	322	17	41	35	0.5	5	0.0		0.0	3.0	10	78	14
26055	090	INCISE FINGER TENDON SHEATH	254	15	25	31	0.5	5	0.0		0.0	2.5	10	78	13
28470	090	TREAT METATARSAL FRACTURE	174	6	23	6	NA		0.0		0.0	3.5	5	77	7
20610	000	DRAIN/INJECT JOINT/BURSA	78	7	15	7	NA		NA		NA	NA		583	9

Non-Surgical Reference Services

		Total Work	Intra-time	Total time	Number of Responses[c]	
Cpt	Description	1993	(mins.)	(mins.)	intra	total
99254	INITIAL INPATIENT CONSULT	228	65	80	999	999
99204	OFFICE/OUTPATIENT VISIT, NEW	172	45	63	999	999
99213	OFFICE/OUTPATIENT VISIT, EST	57	15	21	999	999

Appendix C.2
Fact Sheet: Time data for selected orthopedic surgery reference services (continued)

Non-Surgical Reference Services (continued)

Cpt	Description	Total Work 1993	Intra-time (mins.)	Total time (mins.)	Number of Responses[c] intra	total
99231	SUBSEQUENT HOSPITAL CARE	54	15	18	999	999
73510	X-RAY EXAM OF HIP	20		5		105
73560	X-RAY EXAM OF KNEE	16		3*		

[a] The average number of responses across all the components of pre-post time estimates.
[b] The type of visit is measured by minutes in increments of five.
[c] The work values for e/m services were derived from a regression model and survey responses from more than 1000 physicians.
We use a N of 999 for these services.
* Time or visit estimate obtained from prediction rather than survey.

Appendix C.2
Fact Sheet: Time data for selected otolaryngology reference services

Surgical Reference Services

CPT	Pack	Description	Total Work 1993	Time (mins.) Pre-Before O.R. Entry	Intra	Immediate Pre-Post	Later Same Day Post Visits	Later Same Day Post Type[b]	Hospital Post-op Hospital Visits	Hospital Post-op Type[b]	Hospital Post-op ICU Visits	Office Post-op Visits	Office Post-op Type[b]	Number of Responses[a] Intra	Number of Responses[a] Pre-Post
41155	090	TONGUE, JAW, & NECK SURGERY	2323	36	326	74	1.5	10	13.0	15	3.0	5.5	15	15	13
42420	090	EXCISE PAROTID GLAND/LESION	1850	32	182	46	1.0	10	4.0	10	0.0	3.5	15	15	12
69642	090	REVISE MIDDLE EAR & MASTOID	1625	26	192	45	1.0	10	1.0	10	0.0	5.0	15	10	12
31225	090	REMOVAL OF UPPER JAW	1508	29	172	60	1.0	15	5.0	10	0.0	4.5	15	12	11
31360	090	REMOVAL OF LARYNX	1508	37	139	63	1.5	15	12.0	10	1.5	5.0	15	15	11
69641	090	REVISE MIDDLE EAR & MASTOID	1220	25	175	46	1.0	10	1.0	10	0.0	4.0	10	99	12
69633	090	REBUILD EARDRUM STRUCTURES	1168	25*	122	44	0.5	10	0.5*	10	0.0	4.5*	10	10	10
69631	090	REPAIR EARDRUM STRUCTURES	949	24	104	43	0.5	10	0.5	10	0.0	4.0	10	15	13
41120	090	PARTIAL REMOVAL OF TONGUE	877	26	73	46	1.0	10	5.0	10	0.0	4.0	10	15	13
31201	090	REMOVAL OF ETHMOID SINUS	786	22	62	40	1.0	10	1.5	10	0.0	3.5	10	15	12
31255	000	REMOVAL OF ETHMOID SINUS	691	22	78	42	1.0	10	NA		NA	NA		15	13
42440	090	EXCISION SUBMAXILLARY GLAND	656	22	71	34	1.0	10	1.5	10	0.0	2.5	10	15	13
30520	090	REPAIR OF NASAL SEPTUM	550	22	58	39	1.0	10	0.0		0.0	3.0	10	16	13
31603	000	INCISION OF WINDPIPE	413	7	23	30	1.5	10	NA		NA	NA		298	41
31541	000	OPERATIVE LARYNGOSCOPY	354	23	42	33	0.5	10	NA		NA	NA		15	12

Appendix C.2
Fact Sheet: Time data for selected otolaryngology reference services (continued)

Surgical Reference Services

CPT	Pack	Description	Total Work 1993	Time (mins.) Pre-Before O.R. Entry	Intra	Immediate Pre-Post	Later Same Day Post Visits	Type[b]	Hospital Post-op Hospital Visits	Type[b]	ICU Visits	Office Post-op Visits	Type[b]	Number of Responses[a] Intra	Pre-Post
31535	000	OPERATIVE LARYNGOSCOPY	314	20	24	30	0.5	5	NA		NA	NA		102	11
21320	010	TREATMENT OF NOSE FRACTURE	180	20	25	20	NA		0.0		0.0	0.5	10	103	111
69433	010	CREATE EARDRUM OPENING	146	5	14	5	NA		0.0		0.0	1.0	10	15	12
31575	000	DIAGNOSTIC LARYNGOSCOPY	109	6	14	6	NA		NA		NA	NA		15	12
31505	000	DIAGNOSTIC LARYNGOSCOPY	61	5	7	5	NA		NA		NA	NA		15	12

Non-Surgical Reference Services

Cpt	Description	Total Work 1993	Intra-time (mins.)	Total time (mins.)	Number of Responses[c] intra	total
99244	OFFICE CONSULTATION	223	60	82	999	999
99204	OFFICE/OUTPATIENT VISIT, NEW	172	45	63	999	999
99202	OFFICE/OUTPATIENT VISIT, NEW	77	20	28	999	999
99213	OFFICE/OUTPATIENT VISIT, EST	57	15	21	999	999

[a] The average number of responses across all the components of pre-post time estimates.
[b] The type of visit is measured by minutes in increments of five.
[c] The work values for e/m services were derived from a regression model and survey responses from more than 1000 physicians.
We use a N of 999 for these services.
* Time or visit estimate obtained from prediction rather than survey.

Appendix C.2
Fact Sheet: Time data for selected pathology reference services

Non-Surgical Reference Services

Cpt	Description	Total Work 1993	Intra-time (mins.)	Total time (mins.)	Number of Responses[C] intra	total
99254	INITIAL INPATIENT CONSULT	228	65	80	999	999
88309	TISSUE EXAM BY PATHOLOGIST	227		77		628
88307	TISSUE EXAM BY PATHOLOGIST	158		48		834
80502	LAB PATHOLOGY CONSULTATION	132		50		148
88331	PATHOLOGY CONSULT IN SURGERY	118		23		274
88173	INTERPRETATION OF SMEAR	107		36		87
86078	PHYSICIAN BLOOD BANK SERVICE	93		37		80
88305	TISSUE EXAM BY PATHOLOGIST	75		24		880
85105	BONE MARROW, INTERPRETATION	62		18		86
99213	OFFICE/OUTPATIENT VISIT, EST	57	15	21	999	999
88104	MICROSCOPIC EXAM OF CELLS	56		21		264
88160	CYTOPATHOLOGY	50		22		92
80500	LAB PATHOLOGY CONSULTATION	39		12		217
88311	DECALCIFY TISSUE	23		5		78

Appendix C.2
Fact Sheet: Time data for selected pathology reference services (continued)

Non-Surgical Reference Services

Cpt	Description	Total Work 1993	Intra-time (mins.)	Total time (mins.)	Number of Responses[c] intra	total
88304	TISSUE EXAM BY PATHOLOGIST	21		11		647
88302	TISSUE EXAM BY PATHOLOGIST	13		7		555
88300	TISSUE EXAM BY PATHOLOGIST	8		4		456

[a] The average number of responses across all the components of pre-post time estimates.
[b] The type of visit is measured by minutes in increments of five.
[c] The work values for e/m services were derived from a regression model and survey responses from more than 1000 physicians. We use a N of 999 for these services.
* Time or visit estimate obtained from prediction rather than survey.

Appendix C.2
Fact Sheet: Time data for selected plastic surgery reference services

Surgical Reference Services

CPT	Pack	Description	Total Work 1993	Time (mins.) Pre-Before O.R. Entry	Intra	Immediate Pre-Post	Later Same Day Post Visits	Type[b]	Hospital Post-op Hospital Visits	Type[b]	ICU Visits	Office Post-op Visits	Type[b]	Number of Responses[a] Intra	Pre-Post
15755	090	MICROVASCULAR FREE FLAP	2813	62	433	80*	1.5*	10	5.0	15	0.0	5.5	15	14	12
15946	090	REMOVAL OF PRESSURE SORE	1966	46	184	55*	1.0*	10	8.5	15	0.0	4.0	20	100	14
15732	090	MUSCLE-SKIN FLAP, HEAD/NECK	1201	44*	183	55*	1.0*	10	5.0*	15	0.0	5.0*	15	10	
15831	090	EXCISE EXCESSIVE SKIN TISSUE	1158	42	177	55*	1.0*	10	1.5	15	0.0	4.5	15	10	11
19342	090	DELAYED BREAST PROSTHESIS	1056	39	115	50*	1.0*	10	0.5	15	0.0	4.5	15	11	11
15260	090	SKIN FULL GRAFT PROCEDURE	950	32	92	40*	1.0*	10	0.0		0.0	5.0	15	102	16
15100	090	SKIN SPLIT GRAFT PROCEDURE	800	39	73	48	1.0	10	3.5	15	0.0	4.5	15	193	35
15220	090	SKIN FULL GRAFT PROCEDURE	737	27	90	45*	1.0*	10	1.0	15	0.0	4.5	10	12	12
14040	090	SKIN TISSUE REARRANGEMENT	713	32*	92	26*	1.0*	10	1.5	15	0.0	4.2	15	128	15
14000	090	SKIN TISSUE REARRANGEMENT	539	25	64	20*	0.5*	10	0.5	10	0.0	3.7	15	16	15
13300	010	REPAIR OF WOUND OR LESION	508	26	61	20*	0.5*	10	0.5	10	0.0	1.0	10	102	15
13132	010	REPAIR OF WOUND OR LESION	419	18	50	22	NA		0.0		0.0	1.0	10	102	112
64721	090	CARPAL TUNNEL SURGERY	395	22	35	36	0.5	10	0.0		0.0	3.5	10	529	93
13100	010	REPAIR OF WOUND OR LESION	304	21	33	21	NA		0.0		0.0	1.0	10	16	11
11642	010	REMOVAL OF SKIN LESION	286	9	38	9	NA		0.0		0.0	1.0	10	352	14
15786	010	ABRASION TREATMENT OF LESION	197	10	17	10	NA		0.0		0.0	1.0	10	12	10

Appendix C.2
Fact Sheet: Time data for selected plastic surgery reference services

Non-Surgical Reference Services

Cpt	Description	Total Work 1993	Intra-time (mins.)	Total time (mins.)	Number of Responses[c] intra	total
99254	INITIAL INPATIENT CONSULT	228	65	80	999	999
99203	OFFICE/OUTPATIENT VISIT, NEW	115	30	42	999	999
99242	OFFICE CONSULTATION	111	30	42	999	999
99213	OFFICE/OUTPATIENT VISIT, EST	57	15	21	999	999
99231	SUBSEQUENT HOSPITAL CARE	54	15	18	999	999

[a] The average number of responses across all the components of pre-post time estimates.
[b] The type of visit is measured by minutes in increments of five.
[c] The work values for e/m services were derived from a regression model and survey responses from more than 1000 physicians. We use a N of 999 for these services.
* Time or visit estimate obtained from prediction rather than survey.

Appendix C.2
Fact Sheet: Time data for selected psychiatry reference services

Non-Surgical Reference Services

Cpt	Description	Total Work 1993	Intra-time (mins.)	Total time (mins.)	Number of Responses[c] intra	total
99255	INITIAL INPATIENT CONSULT	314	88	110	999	999
99245	OFFICE CONSULTATION	296	80	109	999	999
99285	EMERGENCY DEPT VISIT	263		50	999	999
99223	INITIAL HOSPITAL CARE	257	70	93	999	999
99275	CONFIRMATORY CONSULTATION	232	60	87	999	999
99254	INITIAL INPATIENT CONSULT	228	65	80	999	999
90801	PSYCHIATRIC INTERVIEW	217	50	88	491	491
90847	SPECIAL FAMILY THERAPY	217	50	76	133	133
90845	MEDICAL PSYCHOANALYSIS	176	50	58	112	112
90844	PSYCHOTHERAPY, 45-50 MIN	171	50	61	1471	1471
99233	SUBSEQUENT HOSPITAL CARE	126	35	40	999	999
99263	FOLLOW-UP INPATIENT CONSULT	117	30	43	999	999
90843	PSYCHOTHERAPY, 20-30 MIN	109	25	36	483	483
99238	HOSPITAL DISCHARGE DAY	108		35	999	999

Appendix C.2
Fact Sheet: Time data for selected psychiatry reference services (continued)

Non-Surgical Reference Services

Cpt	Description	Total Work 1993	Intra-time (mins.)	Total time (mins.)	Number of Responses[c] intra	total
90862	MEDICATION MANAGEMENT	94	28	37	186	186
99232	SUBSEQUENT HOSPITAL CARE	90	25	29	999	999
99262	FOLLOW-UP INPATIENT CONSULT	76	20	29	999	999
99231	SUBSEQUENT HOSPITAL CARE	54	15	18	999	999
90853	SPECIAL GROUP THERAPY	43	90	125	152	152

[a] The average number of responses across all the components of pre-post time estimates.
[b] The type of visit is measured by minutes in increments of five.
[c] The work values for e/m services were derived from a regression model and survey responses from more than 1000 physicians.
We use a N of 999 for these services.
* Time or visit estimate obtained from prediction rather than survey.

Appendix C.2
Fact Sheet: Time data for selected radiology reference services

Non-Surgical Reference Services

Cpt	Description	Total Work 1993	Intra-time (mins.)	Total time (mins.)	Number of Responses[c] intra	total
77425	WEEKLY RADIATION THERAPY	242		51		110
79000	NUCLEAR THERAPY, THYROID	178		48		119
70551	MAGNETIC IMAGE, BRAIN (MRI)	147		11		628
78465	NUCLEAR SCAN, HEART MUSCLE	145		35		107
70470	CONTRAST CAT SCANS OF HEAD	126		8		81
78461	NUCLEAR SCAN, HEART MUSCLE	122		28		108
78472	NUCLEAR SCAN, HEART MUSCLE	97		20*		
78306	NUCLEAR SCAN OF SKELETON	85		16		124
70450	CAT SCAN OF HEAD OR BRAIN	84		6*		
76700	ECHO EXAM OF ABDOMEN	80		24		107
78580	NUCLEAR SCAN OF LUNG	74		16		122
76872	ECHO EXAM OF PROSTATE	69		20*		
76516	ECHO EXAM OF EYE	54		17		90
76091	MAMMOGRAM, BOTH BREASTS	41		8		112
74740	X-RAY FEMALE GENITAL TRACT	37		8*		

Appendix C.2
Fact Sheet: Time data for selected radiology reference services (continued)

Non-Surgical Reference Services

Cpt	Description	Total Work 1993	Intra-time (mins.)	Total time (mins.)	Number of Responses[c] intra	total
70150	X-RAY EXAM OF FACIAL BONES	25		5*		
71020	CHEST X-RAY	21		5		190
71010	CHEST X-RAY	17		5		102
73620	X-RAY EXAM OF FOOT	16		3*		
72020	X-RAY EXAM OF SPINE	15		3*		

[a] The average number of responses across all the components of pre-post time estimates.
[b] The type of visit is measured by minutes in increments of five.
[c] The work values for e/m services were derived from a regression model and survey responses from more than 1000 physicians.
We use a N of 999 for these services.
* Time or visit estimate obtained from prediction rather than survey.

Appendix C.2
Fact Sheet: Time data for selected cardiothoracic surgery reference services

Surgical Reference Services

CPT	Pack	Description	Total Work 1993	Time (mins.) Pre-Before O.R. Entry	Intra	Immediate Pre-Post	Later Same Day Post Visits	Type[b]	Hospital Post-op Hospital Visits	Type[b]	ICU Visits	Office Post-op Visits	Type[b]	Number of Responses[a] Intra	Pre-Post
33870	090	TRANSVERSE AORTIC ARCH GRAFT	3747	53	336	100	2.5	10	10.5	15	5.0	1.5	20	9	11
33514	090	CORONARY ARTERIES BYPASS	2987	45	271	83	2.0	10	9.5	15	2.0	1.5	20	10	11
33430	090	REPLACEMENT OF MITRAL VALVE	2921	39	201	86	2.0	10	9.0	15	3.0	1.5	20	12	12
33405	090	REPLACEMENT OF AORTIC VALVE	2827	36	186	86	2.0	10	10.0	15	3.0	1.5	20	81	25
33512	090	CORONARY ARTERIES BYPASS	2626	45	200	81	2.0	10	9.0	15	2.0	1.5	20	80	31
33425	090	REPAIR OF MITRAL VALVE	2538	42	217	87	2.0	10	9.0	15	3.0	1.5	20	12	12
33500	090	REPAIR HEART VESSEL FISTULA	2374	48	170	74	2.0	10	7.5	15	2.0	1.5	20	9	10
33510	090	CORONARY ARTERY BYPASS	2267	45	177	79	2.0	10	9.0	15	2.0	1.5	20	10	11
35081	090	REPAIR DEFECT OF ARTERY	2200	29	167	77	1.5	10	10.0	10	2.0	1.5	20	81	26
32480	090	PARTIAL REMOVAL OF LUNG	1730	32	131	61	1.5	10	9.5	10	2.0	1.5	20	91	25
35301	090	RECHANNELING OF ARTERY	1608	36	120	61	1.5	10	5.0	10	1.0	2.0	15	155	42
32500	090	PARTIAL REMOVAL OF LUNG	1301	35	99	50	1.5	10	7.5	10	1.0	1.5	20	12	12
39010	090	EXPLORATION OF CHEST	1232	20	115	48	1.0	10	4.5	15	1.0	1.5	15	11	8
32100	090	EXPLORATION/BIOPSY OF CHEST	999	36	92	60	1.5	10	7.0	10	1.0	1.5	20	12	12
39020	090	EXPLORATION OF CHEST	830	34	65	52	1.5	10	5.5	10	1.0	1.0	20	23	13

Appendix C.2
Fact Sheet: Time data for selected cardiothoracic surgery reference services (continued)

Surgical Reference Services

CPT	Pack	Description	Total Work 1993	Time (mins.) Pre-Before O.R. Entry	Intra	Immediate Pre-Post	Later Same Day Post Visits	Type[b]	Hospital Post-op Hospital Visits	Type[b]	ICU Visits	Office Post-op Visits	Type[b]	Number of Responses[a] Intra	Pre-Post
33207	090	INSERTION OF HEART PACEMAKER	723	28	62	42	1.0	10	3.0	10	1.0	1.5	15	155	22
33206	090	INSERTION OF HEART PACEMAKER	600	19	59	42	1.0	10	3.0	10	0.0	1.5	15	7	9
39400	010	VISUALIZATION OF CHEST	508	28	46	38	1.0	10	2.0	10	0.0	1.0	10	92	30
32020	000	INSERTION OF CHEST TUBE	394	14	24	31	1.0	10	NA		NA	NA		370	20
33010	000	DRAINAGE OF HEART SAC	222	14*	24	25	1.0	5	NA		NA	NA		94	14
32000	000	DRAINAGE OF CHEST	153	10	28	20	1.0	5	NA		NA	NA		359	12

Non-Surgical Reference Services

Cpt	Description	Total Work 1993	Intra-time (mins.)	Total time (mins.)	Number of Responses[c] intra	total
99223	INITIAL HOSPITAL CARE	257	70	93	999	999
99244	OFFICE CONSULTATION	223	60	82	999	999
99213	OFFICE/OUTPATIENT VISIT, EST	57	15	21	999	999
99231	SUBSEQUENT HOSPITAL CARE	54	15	18	999	999

[a] The average number of responses across all the components of pre-post time estimates.
[b] The type of visit is measured by minutes in increments of five.
[c] The work values for e/m services were derived from a regression model and survey responses from more than 1000 physicians. We use a N of 999 for these services.
* Time or visit estimate obtained from prediction rather than survey.

Appendix C.2
Fact Sheet: Time data for selected urology reference services

Surgical Reference Services

CPT	Pack	Description	Total Work 1993	Time (mins.) Pre-Before O.R. Entry	Intra	Immediate Pre-Post	Later Same Day Post Visits	Later Same Day Post Type[b]	Hospital Post-op Hospital Visits	Hospital Post-op Type[b]	Hospital Post-op ICU Visits	Office Post-op Visits	Office Post-op Type[b]	Number of Responses[a] Intra	Number of Responses[a] Pre-Post
51595	090	REMOVE BLADDER; REVISE TRACT	3401	54	328	74	1.5	15	15.0	15	2.0	3.5	20	112	24
51590	090	REMOVE BLADDER; REVISE TRACT	2999	50	310	74	1.5	15	12.0	15	2.0	3.5	15	13	19
55845	090	EXTENSIVE PROSTATE SURGERY	2654	46	247	63	1.5	10	11.0	10	0.0	3.0	15	14	17
50236	090	REMOVAL OF KIDNEY & URETER	2316	39	214	59	1.5	10	8.5	10	0.0	2.5	15	14	20
50230	090	REMOVAL OF KIDNEY	2041	41	222	65	1.5	10	9.0	10	0.0	2.5	15	14	17
50780	090	REIMPLANT URETER IN BLADDER	1700	34	115	56	1.0	10	6.5	10	0.0	3.0	15	14	20
50220	090	REMOVAL OF KIDNEY	1586	36	126	58	1.0	10	8.0	10	0.0	2.5	15	14	17
55831	090	REMOVAL OF PROSTATE	1420	31	114	54	1.5	10	7.5	10	0.0	2.5	10	14	17
55821	090	REMOVAL OF PROSTATE	1290	32	102	54	1.5	10	7.0	10	0.0	2.5	10	14	17
52601	090	PROSTATECTOMY (TURP)	1143	32	62	45	1.0	10	4.0	10	0.0	2.5	15	114	48
50590	090	FRAGMENTING OF KIDNEY STONE	956	30	66	40	0.5	10	0.0		0.0	2.5	15	65	23
54400	090	INSERT SEMI-RIGID PROSTHESIS	852	36	66	44	0.5	10	1.5	10	0.0	2.5	10	100	24
52336	000	CYSTOSCOPY, STONE REMOVAL	683	30	75	38	1.0	10	NA		NA	NA		112	24
54640	090	SUSPENSION OF TESTIS	650	36	76	40	0.5	10	0.5	10	0.0	2.0	10	14	16
54520	090	REMOVAL OF TESTIS	489	21	40	38	0.5	10	1.0	10	0.0	1.5	10	14	17
54161	010	CIRCUMCISION	320	15	45	29	0.5	10	0.0		0.0	1.0	10	14	21

Appendix C.2
Fact Sheet: Time data for selected urology reference services (continued)

Surgical Reference Services

CPT	Pack	Description	Total Work 1993	Time (mins.) Pre-Before O.R. Entry	Intra	Immediate Pre-Post	Later Same Day Post Visits	Type[b]	Hospital Post-op Hospital Visits	Type[b]	ICU Visits	Office Post-op Visits	Type[b]	Number of Responses[a] Intra	Pre-Post
52332	000	CYSTOSCOPY AND TREATMENT	281	25	32	34	0.5	10	NA		NA	NA		110	22
52000	000	CYSTOSCOPY	200	12	14	12	NA		NA		NA	NA		221	21
55700	000	BIOPSY OF PROSTATE	156	12	18	12	NA		NA		NA	NA		14	21
51700	000	IRRIGATION OF BLADDER	87	9	16	9	NA		NA		NA	NA		13	21
53670	000	INSERT URINARY CATHETER	50	6	8	6	NA		NA		NA	NA		14	20

Non-Surgical Reference Services

Cpt	Description	Total Work 1993	Intra-time (mins.)	Total time (mins.)	Number of Responses[c] intra	total
99254	INITIAL INPATIENT CONSULT	228	65	80	999	999
99204	OFFICE/OUTPATIENT VISIT, NEW	172	45	63	999	999
99242	OFFICE CONSULTATION	111	30	42	999	999
99213	OFFICE/OUTPATIENT VISIT, EST	57	15	21	999	999
99231	SUBSEQUENT HOSPITAL CARE	54	15	18	999	999

[a] The average number of responses across all the components of pre-post time estimates.
[b] The type of visit is measured by minutes in increments of five.
[c] The work values for e/m services were derived from a regression model and survey responses from more than 1000 physicians. We use a N of 999 for these services.
* Time or visit estimate obtained from prediction rather than survey.

Key: Appendix C.2
Fact Sheet Variables

Surgical Reference Services

Pack -- We used the global definition for each surgical reference service as designated in the 1993 MFS. For major surgery, '090', the definition includes all pre-operative services provided by the surgeon beginning the day before surgery, intra-operative services that are normally a usual and necessary part of the procedure, and all post-operative services within 90 days following the procedure. For minor surgery and non-incisional procedures, a shorter post-operative period is used, ranging from zero ('000') to 10 ('010') days.

Total Work 1993 -- Total work from the 1993 MFS is shown on the Harvard scale of work.

Pre-Before O.R. Entry -- The amount of time spent by the surgeon on the day before and day of a procedure, up to admission to the operating room.

Intra -- The time spent by the surgeon performing the procedure itself (i.e. skin to skin time for incisional services).

Immediate Pre-Post -- The amount of time spent by the surgeon from the admission to the operating room to the skin incision or beginning of the procedure, plus the time from skin closure until the patient leaves the operating room.

Later Same Day Post -- The amount of time spent by the surgeon after the patient leaves the recovery room on the day of the procedure. These data include the **number (Visits column)**, and **duration (Type column)** of surgeon post-operative visits to the patient during this period. The **Type** of visit is measured by minutes in increments of five.

Hospital Post-Op -- The amount of time spent by the surgeon for in-hospital post-operative care after the day of the procedure. These data include the **number (Visits column)**, **duration (Type column)**, and **ICU Visits** of surgeon post-operative visits to the patient during this period. The **Type** of visit is measured by minutes in increments of five.

Office Post-Op -- The amount of time spent by the surgeon for post-operative care in the office after the day of the procedure. These data will include the **number (Visits column)**, and **duration (Type column)** of post-operative visits to the patient during this period. The **Type** of visit is measured by minutes in increments of five.

Number of Responses -- The number of survey responses used to estimate time. For Intra time the actual number of responses are entered. For prepost, the average number of responses across all the components of Pre-Post time estimates is presented.

Non-Surgical Reference Services

Total Work 1993 -- Total work from the 1993 MFS is shown on the Harvard scale of work.

Intra-time -- The time spent by the surgeon performing the procedure itself (i.e. skin to skin time for incisional services).

Total time -- The time spent by the physician before, during and after the service.

Number of Responses -- The number of survey responses used to estimate time. The work values were derived from a regression model and survey responses from more than 1000 physicians. We use a N of 999 for these services.

Appendix D

Appendix Table D.1
Unlisted 'By Report' CPT Surgical Codes

CPT Code	Description	CPT Code	Description
15999	REMOVAL OF PRESSURE SORE	17999	SKIN TISSUE PROCEDURE
19499	BREAST SURGERY PROCEDURE	20999	MUSCULOSKELETAL SURGERY
21299	CRANIO/MAXILLOFACIAL SURGERY	21499	HEAD SURGERY PROCEDURE
21899	NECK/CHEST SURGERY PROCEDURE	22899	SPINE SURGERY PROCEDURE
22999	ABDOMEN SURGERY PROCEDURE	23929	SHOULDER SURGERY PROCEDURE
24999	UPPER ARM/ELBOW SURGERY	25999	FOREARM OR WRIST SURGERY
26989	HAND/FINGER SURGERY	27299	PELVIS/HIP JOINT SURGERY
27599	LEG SURGERY PROCEDURE	27899	LEG/ANKLE SURGERY PROCEDURE
28899	FOOT/TOES SURGERY PROCEDURE	29909	ARTHROSCOPY OF JOINT
29799	CASTING/STRAPPING PROCEDURE	30999	NASAL SURGERY PROCEDURE
31299	SINUS SURGERY PROCEDURE	31599	LARYNX SURGERY PROCEDURE
31899	AIRWAYS SURGICAL PROCEDURE	32999	CHEST SURGERY PROCEDURE
33999	CARDIAC SURGERY PROCEDURE	36299	VESSEL INJECTION PROCEDURE
37799	VASCULAR SURGERY PROCEDURE	38999	BLOOD/LYMPH SYSTEM PROCEDURE
39499	CHEST PROCEDURE	39599	DIAPHRAGM SURGERY PROCEDURE
40799	LIP SURGERY PROCEDURE	40899	MOUTH SURGERY PROCEDURE
41599	TONGUE AND MOUTH SURGERY	41899	DENTAL SURGERY PROCEDURE
42299	PALATE/UVULA SURGERY	42699	SALIVARY SURGERY PROCEDURE
42999	THROAT SURGERY PROCEDURE	43499	ESOPHAGUS SURGERY PROCEDURE
43999	STOMACH SURGERY PROCEDURE	44799	INTESTINE SURGERY PROCEDURE
44899	BOWEL SURGERY PROCEDURE	45999	RECTUM SURGERY PROCEDURE
46999	ANUS SURGERY PROCEDURE	47399	LIVER SURGERY PROCEDURE
47999	BILE TRACT SURGERY PROCEDURE	48999	PANCREAS SURGERY PROCEDURE
49999	ABDOMEN SURGERY PROCEDURE	53899	UROLOGY SURGERY PROCEDURE
55899	GENITAL SURGERY PROCEDURE	58999	GENITAL SURGERY PROCEDURE
59899	MATERNITY CARE PROCEDURE	60699	ENDOCRINE SURGERY PROCEDURE
64999	NERVOUS SYSTEM SURGERY	66999	EYE SURGERY PROCEDURE
67299	EYE SURGERY PROCEDURE	67399	EYE MUSCLE SURGERY PROCEDURE
67599	ORBIT SURGERY PROCEDURE	67999	EYELID SURGERY PROCEDURE
68399	EYELID LINING SURGERY	68899	TEAR DUCT SYSTEM SURGERY
69399	OUTER EAR SURGERY PROCEDURE	69799	MIDDLE EAR SURGERY PROCEDURE
69949	INNER EAR SURGERY PROCEDURE	69979	TEMPORAL BONE SURGERY

Appendix Table D.1 (continued)
Unlisted 'By Report' CPT Nonsurgical Codes

CPT Code	Description	CPT Code	Description
76499	RADIOGRAPHIC PROCEDURE	76999	ECHO EXAMINATION PROCEDURE
77299	RADIATION THERAPY PLANNING	77399	EXTERNAL RADIATION DOSIMETRY
77499	RADIATION THERAPY MANAGEMENT	77799	RADIUM/RADIOISOTOPE THERAPY
78099	ENDOCRINE NUCLEAR PROCEDURE	78199	NUCLEAR EXAM BLOOD/LYMPH
78299	G.I. NUCLEAR PROCEDURE	78399	MUSCULOSKELETAL NUCLEAR EXAM
78499	CARDIOVASCULAR NUCLEAR EXAM	78599	RESPIRATORY NUCLEAR EXAM
78699	NERVOUS SYSTEM NUCLEAR EXAM	78799	GENITOURINARY NUCLEAR EXAM
78999	NUCLEAR DIAGNOSTIC EXAM	79999	NUCLEAR MEDICINE THERAPY
88199	CYTOPATHOLOGY PROCEDURE	88299	CYTOGENETIC STUDY
88399	SURGICAL PATHOLOGY PROCEDURE	89399	PATHOLOGY LAB PROCEDURE
90749	IMMUNIZATION PROCEDURE	90799	THERAPEUTIC/DIAG INJECTION
90999	DIALYSIS PROCEDURE	91299	GASTROENTEROLOGY PROCEDURE
92499	EYE SERVICE OR PROCEDURE	92599	ENT PROCEDURE/SERVICE
93799	CARDIOVASCULAR PROCEDURE	94799	PULMONARY SERVICE/PROCEDURE
95199	ALLERGY IMMUNOLOGY SERVICES	95999	NEUROLOGICAL PROCEDURE
96549	CHEMOTHERAPY, UNSPECIFIED	96999	DERMATOLOGICAL PROCEDURE
97799	PHYSICAL MEDICINE PROCEDURE	99199	SPECIAL SERVICE OR REPORT
99499	UNLISTED E/M SERVICE		

Appendix Table D.2

'By-Report' Code Survey Responses: General Surgery

Service	ID	Responses		Service	Responses		Service	Responses		Service	Responses	
		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work
35549				35548			35162			35161		
Review Value =		2155	1425	Review Value =	2005	1295	Review Value =	1780	1050	Review Value =	1675	970
	A	2155	1425 *		2005	1295 *		1780	1050 *		1675	970 *
	B	2155	1425 *		2005	1295 *		1780	1050 *		1675	970 *
	C	2155	1425 *		2005	1295 *		1780	1050 *		1675	970 *
	D	NR	NR		NR	NR		NR	NR		NR	NR
	E	NR	NR		NR	NR		NR	NR		NR	NR
	F	NR	NR		NR	NR		NR	NR		NR	NR
	G	2155	1425 *		2005	1295 *		1780	1050 *		1675	970 *
	H	2155	1425 *		2005	1295 *		2200	1400		2100	1300
	I	NR	NR		NR	NR		NR	NR		NR	NR
	J	2155	1425 *		2005	1295 *		1780	1050 *		1675	970 *
	K	2155	1425 *		1900	1295		1950	1050		1675	970 *
	L	NR	NR		NR	NR		NR	NR		NR	NR
	M	2155	1425 *		2005	1295 *		1780	1050 *		1675	970 *
	N	NR	NR		NR	NR		NR	NR		NR	NR
	O	2155	1425 *		2005	1295 *		1780	1050 *		1675	970 *
	P	2155	1425 *		2005	1295 *		1780	1050 *		1675	970 *
	Q	NR	NR		NR	NR		NR	NR		NR	NR
	R	2300	1560		2160	1450		1780	1050 *		1780	1050
	S	NR	NR		NR	NR		NR	NR		NR	NR
	T	2155	1400		2005	1330		1780	1050 *		1675	970 *
	U	2155	1350		1900	1000		1950	1400		2150	1300
	V	2250	1450		2000	1300		1500	800		1500	800
	W	2000	1200		1800	1000		1700	1000		1600	900
	X	NR	NR		2005	1295 *		NR	NR		NR	NR
	Y	NR	NR		NR	NR		NR	NR		NR	NR
	Z	2415	1585		2175	1375		2375	1415		1950	1025
Mean Review Rating (including agree):		2175	1422		1998	1271		1833	1087		1732	998
Std. Error (%)		1.0	1.5		1.0	2.3		2.6	3.7		2.4	3.0
% difference from review value		0.9	-0.2		-0.4	-1.8		3.0	3.5		3.4	2.9

Appendix Table D.2 (continued)

'By-Report' Code Survey Responses: General Surgery

Service	ID	Responses		Service	Responses		Service	Responses		Service	Responses	
		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work
35870				34520			34510			34530		
Review Value =		1620	860	Review Value =	1225	600	Review Value =	1155	505	Review Value =	1010	445
	A	2050	1350		1225	600 *		1155	505 *		1010	445 *
	B	1620	860 *		1225	600 *		1155	505 *		1010	445 *
	C	1900	1100		1225	600 *		1155	505 *		1010	445 *
	D	NR	NR		NR	NR		NR	NR		NR	NR
	E	NR	NR		NR	NR		NR	NR		NR	NR
	F	NR	NR		NR	NR		NR	NR		NR	NR
	G	1620	860 *		1225	600 *		1155	505 *		1010	445 *
	H	2400	1500		1225	600 *		1155	505 *		1010	445 *
	I	NR	NR		NR	NR		NR	NR		NR	NR
	J	2200	1400		1225	600 *		1155	505 *		1010	445 *
	K	1620	860 *		1225	600 *		1155	505 *		1010	445 *
	L	NR	NR		NR	NR		NR	NR		NR	NR
	M	2300	1450		1225	600 *		1155	505 *		1010	445 *
	N	NR	NR		NR	NR		NR	NR		NR	NR
	O	1620	860 *		1225	600 *		1155	505 *		1010	445 *
	P	2200	1200		1225	600 *		1155	505 *		1010	445 *
	Q	NR	NR		NR	NR		NR	NR		NR	NR
	R	2200	1500		1225	600 *		NR	NR		1010	445 *
	S	NR	NR		NR	NR		NR	NR		NR	NR
	T	1620	860 *		1225	600 *		1155	505 *		1010	445 *
	U	2100	1500		1225	600 *		NR	NR		1100	650
	V	2500	1700		1225	600 *		1155	505 *		1010	445 *
	W	2200	1400		1200	700		1200	700		1200	700
	X	3000	1695		1225	600 *		NR	NR		NR	NR
	Y	NR	NR		NR	NR		NR	NR		NR	NR
	Z	1775	925		1235	625		1280	675		1140	550
Mean Review Rating (including agree):		2021	1198		1224	607		1167	528		1034	475
Std. Error (%)		4.6	6.6		0.1	0.9		0.8	3.0		1.3	3.8
% difference from review value		24.8	39.3		-0.1	1.2		1.0	4.5		2.4	6.7

Appendix Table D.2 (continued)

'By-Report' Code Survey Responses: General Surgery

Service	ID	Responses		Service	Responses		Service	Responses		Service	Responses	
		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work
34501				36835			36845			36840		
Review Value =		960	410	Review Value =	655	325	Review Value =	520	325	Review Value =	415	150
	A	960	410 *		655	325 *		520	325 *		415	150 *
	B	960	410 *		NR	NR		NR	NR		NR	NR
	C	960	410 *		655	325 *		520	325 *		415	150 *
	D	NR	NR		NR	NR		NR	NR		NR	NR
	E	NR	NR		NR	NR		NR	NR		NR	NR
	F	NR	NR		NR	NR		NR	NR		NR	NR
	G	960	410 *		655	325 *		520	325 *		415	150 *
	H	960	410 *		655	325 *		520	325 *		415	150 *
	I	NR	NR		NR	NR		NR	NR		NR	NR
	J	960	410 *		655	325 *		520	325 *		415	150 *
	K	960	410 *		655	325 *		520	325 *		415	150 *
	L	NR	NR		NR	NR		NR	NR		NR	NR
	M	960	410 *		655	325 *		520	325 *		415	150 *
	N	NR	NR		NR	NR		NR	NR		NR	NR
	O	960	410 *		655	325 *		520	325 *		415	150 *
	P	960	410 *		655	325 *		520	325 *		415	150 *
	Q	NR	NR		NR	NR		NR	NR		NR	NR
	R	NR	NR		655	325 *		520	325 *		415	150 *
	S	NR	NR		NR	NR		NR	NR		NR	NR
	T	960	410 *		NR	NR		520	325 *		NR	NR
	U	NR	NR		NR	NR		NR	NR		NR	NR
	V	960	410 *		655	325 *		520	325 *		415	150 *
	W	800	500		500	300		500	300		350	200
	X	NR	NR		NR	NR		NR	NR		NR	NR
	Y	NR	NR		NR	NR		NR	NR		NR	NR
	Z	1225	620		765	380		740	360		430	185
Mean Review Rating (including agree):		964	428		649	327		532	326		411	156
Std. Error (%)		2.3	3.2		2.5	1.4		2.6	1.0		1.4	2.7
% difference from review value		0.4	4.5		-0.9	0.6		2.3	0.2		-1.0	3.9

Appendix Table D.2 (continued)

'By-Report' Code Survey Responses: Otolaryngology

Service	ID	Responses		Service	Responses		Service	Responses		Service	Responses	
		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work
31582				31590			31588			30450		
Review Value =		1285	750	Review Value =	1180	680	Review Value =	1125	700	Review Value =	1030	715
	A	1500	800		900	600		1200	800		1150	800
	B	1285	750 *		940	680		1150	700		1030	715 *
	C	1285	750 *		1290	760		1125	700 *		975	625
	D	1450	800		1220	720		1285	850		1200	750
	E	1285	750 *		1180	680 *		1125	700 *		1030	715 *
	F	1893	1090		1015	585		1800	1120		1490	1010
	G	1300	800		900	680		900	700		1000	715
	H	1285	785		1180	680 *		1125	700 *		1030	700
	I	NR	NR		NR	NR		NR	NR		NR	NR
	J	1285	750 *		1180	680 *		1125	700 *		1200	715
Mean Review Rating (including agree):		1385	803		1080	672		1185	765		1113	743
Std. Error (%)		4.5	4.0		4.8	2.7		6.3	5.5		4.6	4.5
% difference from review value		7.8	7.0		-8.5	-1.2		5.3	9.3		8.1	4.0

Appendix Table D.2 (continued)

'By-Report' Code Survey Responses: Otolaryngology

Service	ID	Responses		Service	Responses		Service	Responses		Service	Responses	
		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work
30420				30410			30400			31755		
Review Value =		980	650	Review Value =	950	635	Review Value =	885	595	Review Value =	785	310
	A	1050	750		1000	650		885	595 *		580	310
	B	1150	725		950	700		885	680		785	310 *
	C	1020	675		1030	715		980	650		785	325
	D	1000	800		985	740		920	660		785	510
	E	980	650 *		950	635 *		885	595 *		785	310 *
	F	1325	880		1100	735		825	555		1035	410
	G	800	650		900	650		700	500		400	310
	H	980	650 *		950	635 *		885	595 *		785	330
	I	NR	NR		NR	NR		NR	NR		NR	NR
	J	980	650 *		950	635 *		885	595 *		1200	310
Mean Review Rating (including agree):		1023	710		978	676		869	600		761	342
Std. Error (%)		4.6	3.7		2.0	2.2		3.1	3.2		11.1	6.0
% difference from review value		4.4	9.3		2.9	6.4		-1.8	0.9		-3.0	10.4

Appendix Table D.2 (continued)

'By-Report' Code Survey Responses: Otolaryngology

Service	ID	Responses		Service	Responses	
		Total Work	Intra Work		Total Work	Intra Work
30435				30430		
Review Value =		770	500	Review Value =	580	360
	A	770	500 *		580	360 *
	B	770	500 *		580	360 *
	C	850	500		580	360 *
	D	770	550		580	400
	E	770	500 *		580	360 *
	F	800	520		520	322
	G	500	400		400	250
	H	770	500 *		580	360 *
	I	NR	NR		NR	NR
	J	840	500		580	360 *
Mean Review Rating (including agree):		752	495		550	345
Std. Error (%)		5.4	2.9		4.2	4.5
% difference from review value		-2.3	-1.0		-5.2	-4.0

Appendix Table D.2 (continued)

'By-Report' Code Survey Responses: Neurosurgery (Family A)

Service	ID	Responses		Service	Responses		Service	Responses		Service	Responses	
		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work
61530				61564			61559			61563		
Review Value =		4135	3380	Review Value =	2650	1800	Review Value =	2450	1635	Review Value =	2300	1520
	A	4135	3380 *		2400	1600		2450	1635 *		2300	1520 *
	B	4135	3380 *		2650	1800 *		2450	1635 *		2300	1520 *
	C	4135	3380 *		3805	3105		3205	2235		2300	1520 *
	D	4135	3380 *		3400	2400		3250	2000		2300	1520 *
	E	4500	4100		2500	2000		4300	4000		2000	1500
	F	4135	3380 *		2650	1800 *		2450	1635 *		2000	1200
	G	4135	3380 *		2650	1800 *		2450	1635 *		2300	1520 *
	H	4500	3745		3000	2150		2600	1785		2300	1520 *
	I	4325	3550		2260	1675		2225	1635		2210	1520
	J	4135	3380 *		2400	1650		2390	1640		2290	1520
	K	4135	3380 *		2650	1800 *		2450	1635 *		2300	1520 *
	L	4135	3380 *		3800	2900		3600	2700		2500	1800
	M	4135	3380 *		2650	1800 *		2450	1635 *		2300	1520 *
	N	4300	3800		3000	2300		3000	2600		2300	1520 *
	O	4200	3500		3300	2600		3500	2800		3000	2300
	P	4135	3380 *		2600	1800		2800	2000		2200	1400
Mean Review Rating (including agree):		4205	3487		2822	2031		2799	1998		2297	1544
Std. Error (%)		0.8	1.4		4.1	5.3		4.8	7.0		2.3	3.3
% difference from review value		1.7	3.2		6.5	12.8		14.2	22.2		-0.1	1.6

Appendix Table D.2 (continued)

'By-Report' Code Survey Responses: Neurosurgery (Family A)

Service	ID	Responses		Service	Responses		Service	Responses	
		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work
61558				61557			61556		
Review Value =		2250	1450	Review Value =	2110	1395	Review Value =	2025	1325
	A	2250	1450 *		2110	1395 *		2025	1325 *
	B	2250	1450 *		2110	1395 *		2025	1325 *
	C	2320	1530		2110	1395 *		2025	1325 *
	D	3000	1800		2110	1395 *		2200	1400
	E	3000	2500		1800	1300		1700	1200
	F	1800	1100		1200	635		1000	600
	G	2250	1450 *		2110	1395 *		2025	1325 *
	H	2250	1450 *		2110	1395 *		2025	1325 *
	I	2160	1450		2160	1450		2025	1325 *
	J	2250	1450 *		2200	1440		2190	1385
	K	2250	1450 *		2110	1395 *		2025	1325 *
	L	2250	1450 *		2110	1395 *		2025	1325 *
	M	2250	1450 *		2110	1395 *		2025	1325 *
	N	2600	1900		2110	1500		2000	1400
	O	3000	2300		2300	1510		2200	1450
	P	2400	1600		2110	1395 *		2025	1325 *
Mean Review Rating (including agree):		2371	1579		2036	1341		1945	1273
Std. Error (%)		3.5	5.1		3.8	5.2		4.8	5.2
% difference from review value		5.4	8.9		-3.5	-3.9		-4.0	-4.0

Appendix Table D.2 (continued)

'By-Report' Code Survey Responses: Neurosurgery (Family B)

Service	ID	Responses		Service	Responses		Service	Responses		Service	Responses	
		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work
61686				61682			61684			61702		
Review Value =		4710	3910	Review Value =	4190	3445	Review Value =	3895	3000	Review Value =	3890	3100
	A	4710	3910 *		4190	3445 *		3895	3000 *		3890	3100 *
	B	4710	3910 *		4190	3445 *		3895	3000 *		4200	3400
	C	4710	3910 *		4190	3445 *		3895	3000 *		3890	3100 *
	D	4710	3910 *		4190	3445 *		3895	3000 *		4000	3500
	E	4500	4200		4400	4100		3800	3400		4000	3500
	F	4710	3910 *		4190	3445 *		3895	3000 *		3890	3100 *
	G	4710	3910 *		4700	3900		3895	3000 *		4500	3800
	H	4710	3910 *		4190	3445 *		3800	2905		4000	3210
	I	4940	4060		4460	3550		4150	3200		4100	3200
	J	4710	3910 *		4600	3800		4100	3300		4100	3400
	K	4710	3910 *		4190	3445 *		3895	3150		3890	3100 *
	L	4710	3910 *		4190	3445 *		3895	3200		4100	3400
	M	4710	3910 *		4190	3445 *		3750	2900		4400	3600
	N	5000	4100		4500	3700		3995	3100		4600	3800
	O	4710	3910 *		4190	3700 *		4010	3115		4009	3210
	P	4600	3800		4400	3600		3895	3000 *		3890	3100 *
Mean Review Rating (includi g agree):		4721	3941		4307	3564		3915	3076		4086	3337
Std. Error (%)		0.6	0.6		1.0	1.4		0.7	1.1		1.4	1.8
% difference from review value		0.2	0.8		2.8	3.4		0.5	2.5		5.0	7.6

Appendix Table D.2 (continued)

'By-Report' Code Survey Responses: Neurosurgery (Family B)

Service	ID	Responses		Service	Responses	
		Total Work	Total Work		Total Work	Intra Work
61692				61680		
Review Value =		3770	2890	Review Value =	3620	2810
	A	3770	2890 *		3620	2810 *
	B	3770	2890 *		3620	2810 *
	C	3770	2890 *		3620	2810 *
	D	3770	3200		3620	3000
	E	3500	3100		3500	3100
	F	NR	NR		3800	3100
	G	3770	2890 *		3620	2810 *
	H	3900	3020		3620	2810 *
	I	4050	3060		3970	2950
	J	4000	3200		4000	3200
	K	3770	2890 *		3620	2810 *
	L	3600	2800		3800	3000
	M	3850	3000		3620	2810 *
	N	4200	3400		3800	3000
	O	4000	3010		3800	2990
	P	3600	2800		3800	3000
Mean Review Rating (including agree):		3817	2998		3712	2935
Std. Error (%)		1.3	1.4		0.9	1.1
% difference from review value		1.3	3.8		2.5	4.5

Appendix Table D.2 (continued)

'By-Report' Code Survey Responses: Neurosurgery (Family C)

Service	ID	Responses		Service	Responses		Service	Responses		Service	Responses	
		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work
62120				62117			62116			62115		
Review Value =		2210	1510	Review Value =	1655	1035	Review Value =	1540	935	Review Value =	1355	810
	A	2210	1510 *		1655	1035 *		1540	935 *		1355	810 *
	B	NR	NR		NR	NR		NR	NR		NR	NR
	C	NR	NR		NR	NR		NR	NR		NR	NR
	D	2800	2000		1655	1035 *		1540	1000		1355	810 *
	E	2000	1750		2700	2400		2700	2400		2500	2100
	F	2210	1510 *		NR	NR		NR	NR		NR	NR
	G	2210	1510 *		1655	1035 *		1540	935 *		1355	810 *
	H	2210	1510 *		1655	1035 *		1540	935 *		1355	810 *
	I	2075	1500		2135	1625		1540	935 *		1355	810 *
	J	2210	1510 *		1700	1040		1550	940		1355	800
	K	2210	1510 *		2250	1560		1540	935 *		1355	810 *
	L	2210	1510 *		1655	1035 *		1540	1200		1355	1100
	M	2210	1510 *		2200	1800		2000	1300		1800	1150
	N	NR	NR		NR	NR		NR	NR		NR	NR
	O	2260	1550		2330	1780		2010	1410		1810	1200
	P	2100	1500		2400	1800		2200	1600		2000	1400
Mean Review Rating (including agree):		2218	1562		1968	1369		1736	1156		1545	1001
Std. Error (%)		2.2	2.4		5.5	9.3		5.7	9.0		6.2	9.3
% difference from review value		0.3	3.5		18.9	32.3		12.9	23.6		14.0	23.5

Appendix Table D.2 (continued)

'By-Report' Code Survey Responses: Neurosurgery (Family D)

Service	ID	Responses		Service	Responses		Service	Responses		Service	Responses	
		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work
63706				63704			63702			63700		
Review Value =		1765	1135	Review Value =	1465	890	Review Value =	1360	840	Review Value =	1130	660
	A	1765	1135 *		1465	890 *		1360	840 *		1130	660 *
	B	NR	NR		NR	NR		NR	NR		NR	NR
	C	NR	NR		NR	NR		NR	NR		NR	NR
	D	1765	1500		1465	1000		1360	1000		1130	800
	E	1500	1300		1300	1100		1000	700		800	600
	F	2100	1380		2075	1350		2050	1350		2040	1280
	G	1765	1135 *		1465	890 *		1360	840 *		1130	660 *
	H	1765	1135 *		1465	890 *		1360	840 *		1130	660 *
	I	1850	1190		1615	925		1150	700		950	600
	J	1750	1400		1560	1300		1450	1100		1210	1000
	K	1765	1135 *		1465	890 *		1360	840 *		1130	660 *
	L	2000	1550		1600	1200		1360	840 *		1130	660 *
	M	1765	1135 *		1465	890 *		1360	840 *		1130	660 *
	N	NR	NR		NR	NR		NR	NR		NR	NR
	O	1910	1315		1665	1090		1580	1050		1510	990
	P	1765	1135 *		1465	890 *		1360	840 *		1130	660 *
Mean Review Rating (including agree):		1800	1257		1535	1012		1376	892		1168	700
Std. Error (%)		2.2	3.3		3.1	4.4		4.6	5.2		6.2	6.7
% difference from review value		2.0	10.7		4.5	13.7		1.2	6.2		3.4	12.1

Appendix Table D.2 (continued)

'By-Report' Code Survey Responses: Orthopedic Surgery (Family A)

Service	ID	Responses		Service	Responses		Service	Responses		Service	Responses	
		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work
20808				20805			20812			20806		
Review Value =		2900	1935	Review Value =	2880	1910	Review Value =	2760	1840	Review Value =	2710	1770
	A	2900	1935 *		2880	1910 *		2760	1840 *		2710	1770 *
	B	NR	NR		NR	NR		NR	NR		NR	NR
	C	NR	NR		NR	NR		NR	NR		NR	NR
	D	2900	1935 *		2760	1840		2880	1910		2710	1770 *
	E	NR	NR		NR	NR		NR	NR		NR	NR
	F	NR	NR		NR	NR		NR	NR		NR	NR
	G	NR	NR		NR	NR		NR	NR		NR	NR
	H	2900	1935 *		2880	1910 *		2760	1840 *		2710	1770 *
	I	2900	1935 *		2880	1910 *		2760	1840 *		2710	1770 *
	J	NR	NR		NR	NR		NR	NR		NR	NR
	K	NR	NR		NR	NR		NR	NR		NR	NR
	L	NR	NR		NR	NR		NR	NR		NR	NR
	M	2900	1935 *		2880	1910 *		2760	1840 *		2710	1770 *
Mean Review Rating (including agree):		2900	1935		2856	1896		2784	1854		2717	1770
Std. Error (%)		0.0	0.0		0.9	0.7		0.9	0.7		0.0	0.0
% difference from review value		0.0	0.0		-0.8	-0.7		0.9	0.7		0.0	0.0

Appendix Table D.2 (continued)

'By-Report' Code Survey Responses: Orthopedic Surgery (Family A)

Service	ID	Responses		Service	Responses		Service	Responses		Service	Responses	
		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work
20802				20832			20838			20804		
Review Value =		2680	1745	Review Value =	2645	1630	Review Value =	2620	1590	Review Value =	2475	1580
	A	2680	1745 *		2645	1630 *		2620	1600		2600	1600
	B	NR	NR		NR	NR		NR	NR		NR	NR
	C	NR	NR		NR	NR		NR	NR		NR	NR
	D	2680	1745 *		2490	1580		2525	1630		2540	1640
	E	NR	NR		NR	NR		NR	NR		NR	NR
	F	NR	NR		NR	NR		NR	NR		NR	NR
	G	NR	NR		NR	NR		NR	NR		NR	NR
	H	2680	1745 *		2670	1740		2670	1740		2475	1580 *
	I	2765	1745		2645	1630 *		2620	1590 *		2475	1580 *
	J	NR	NR		NR	NR		NR	NR		NR	NR
	K	NR	NR		NR	NR		NR	NR		NR	NR
	L	NR	NR		NR	NR		NR	NR		NR	NR
	M	2765	1745		NR	NR		NR	NR		2475	1580 *
Mean Review Rating (including agree):		2697	1745		2612	1644		2608	1639		2513	1596
Std. Error (%)		0.6	0.0		1.6	2.1		1.2	2.1		1.0	0.7
% difference from review value		0.6	0.0		-1.3	0.9		-0.4	3.1		1.5	1.0

Appendix Table D.2 (continued)

'By-Report' Code Survey Responses: Orthopedic Surgery (Family A)

Service	ID	Responses		Service	Responses		Service	Responses		Service	Responses	
		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work
20824				20834			20840			20826		
Review Value =		2070	1460	Review Value =	2065	1175	Review Value =	2035	1145	Review Value =	2005	1420
	A	1800	1180		2065	1200		2035	1175		1775	1150
	B	NR	NR		NR	NR		NR	NR		NR	NR
	C	NR	NR		NR	NR		NR	NR		NR	NR
	D	2070	1460 *		2000	1145		2065	1175		2060	1420
	E	NR	NR		NR	NR		NR	NR		NR	NR
	F	NR	NR		NR	NR		NR	NR		NR	NR
	G	NR	NR		NR	NR		NR	NR		NR	NR
	H	2070	1460 *		2400	1700		2500	1710		2005	1420 *
	I	2070	1460 *		2065	1175 *		2035	1145 *		2005	1420 *
	J	NR	NR		NR	NR		NR	NR		NR	NR
	K	NR	NR		NR	NR		NR	NR		NR	NR
	L	NR	NR		NR	NR		NR	NR		NR	NR
	M	2070	1460 *		NR	NR		NR	NR		2005	1420 *
Mean Review Rating (including agree):		2013	1399		2127	1287		2150	1282		1967	1361
Std. Error (%)		2.8	4.4		4.2	9.8		5.2	10.1		2.7	4.3
% difference from review value		-2.8	-4.2		3.0	9.5		5.7	12.0		-1.9	-4.1

Appendix Table D.2 (continued)

'By-Report' Code Survey Responses: Orthopedic Surgery (Family A)

Service	ID	Responses		Service	Responses		Service	Responses		Service	Responses	
		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work
20816				20820			20827			20822		
Review Value =		1985	1360	Review Value =	1895	1330	Review Value =	1880	1285	Review Value =	1835	1245
	A	1750	1100		1600	1000		1675	1050		1650	1050
	B	NR	NR		NR	NR		NR	NR		NR	NR
	C	NR	NR		NR	NR		NR	NR		NR	NR
	D	1985	1360 *		1895	1330 *		1880	1285 *		1835	1245 *
	E	NR	NR		NR	NR		NR	NR		NR	NR
	F	NR	NR		NR	NR		NR	NR		NR	NR
	G	NR	NR		NR	NR		NR	NR		NR	NR
	H	1985	1360 *		1895	1330 *		1880	1285 *		1835	1245 *
	I	1985	1360 *		1895	1330 *		1880	1285 *		1835	1245 *
	J	NR	NR		NR	NR		NR	NR		NR	NR
	K	NR	NR		NR	NR		NR	NR		NR	NR
	L	NR	NR		NR	NR		NR	NR		NR	NR
	M	1985	1360 *		1895	1330 *		1880	1285 *		1835	1245 *
Mean Review Rating (including agree):		1936	1303		1832	1256		1837	1234		1796	1203
Std. Error (%)		2.6	4.3		3.4	5.9		2.3	4.1		2.1	3.5
% difference from review value		-2.5	-4.2		-3.3	-5.5		-2.3	-4.0		-2.1	-3.3

Appendix Table D.2 (continued)

'By-Report' Code Survey Responses: Orthopedic Surgery (Family A)

Service	ID	Responses		Service	Responses	
		Total Work	Intra Work		Total Work	Intra Work
20828				20823		
Review Value =		1815	1260	Review Value =	1775	1220
	A	1600	1000		1600	1000
	B	NR	NR		NR	NR
	C	NR	NR		NR	NR
	D	1815	1260 *		1775	1220 *
	E	NR	NR		NR	NR
	F	NR	NR		NR	NR
	G	NR	NR		NR	NR
	H	1815	1260 *		1775	1220 *
	I	1815	1260 *		1775	1220 *
	J	NR	NR		NR	NR
	K	NR	NR		NR	NR
	L	NR	NR		NR	NR
	M	1815	1260 *		1775	1220 *
Mean Review Rating (including agree):		1770	1203		1739	1172
Std. Error (%)		2.6	4.7		2.1	4.1
% difference from review value		-2.5	-4.5		-2.1	-3.9

Appendix Table D.2 (continued)

'By-Report' Code Survey Responses: Orthopedic Surgery (Family B)

Service	ID	Responses		Service	Responses		Service	Responses		Service	Responses	
		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work
20955				20962			20970			20973		
Review Value =		2105	1235	Review Value =	2070	1275	Review Value =	2070	1235	Review Value =	2070	1245
	A	2070	1400		2070	1400		2070	1400		2070	1400
	B	NR	NR		NR	NR		NR	NR		NR	NR
	C	NR	NR		NR	NR		NR	NR		NR	NR
	D	2105	1235 *		2070	1275 *		2070	1235 *		2070	1245 *
	E	NR	NR		NR	NR		NR	NR		NR	NR
	F	NR	NR		NR	NR		NR	NR		NR	NR
	G	NR	NR		NR	NR		NR	NR		NR	NR
	H	NR	NR		NR	NR		NR	NR		NR	NR
	I	2105	1235 *		2070	1275 *		2070	1235 *		2070	1245 *
	J	NR	NR		NR	NR		NR	NR		NR	NR
	K	NR	NR		NR	NR		NR	NR		NR	NR
	L	NR	NR		NR	NR		NR	NR		NR	NR
	M	2250	1370		2065	1370		2065	1370		2065	1370
Mean Review Rating (including agree):		2131	1308		2069	1329		2069	1308		2069	1313
Std. Error (%)		1.9	3.4		0.1	2.5		0.1	3.4		0.1	3.2
% difference from review value		1.3	5.9		-0.1	4.2		-0.1	5.9		-0.1	5.5

Appendix Table D.2 (continued)

'By-Report' Code Survey Responses: Orthopedic Surgery (Family B)

Service	ID	Responses		Service	Responses		Service	Responses		Service	Responses	
		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work
20960				20969			20971			20972		
Review Value =		2040	1195	Review Value =	2010	1195	Review Value =	1975	1195	Review Value =	1975	1195
	A	2070	1400		2070	1400		2070	1400		2070	1400
	B	NR	NR		NR	NR		NR	NR		NR	NR
	C	NR	NR		NR	NR		NR	NR		NR	NR
	D	2040	1195 *		2010	1195 *		1975	1195 *		1975	1195 *
	E	NR	NR		NR	NR		NR	NR		NR	NR
	F	NR	NR		NR	NR		NR	NR		NR	NR
	G	NR	NR		NR	NR		NR	NR		NR	NR
	H	NR	NR		NR	NR		NR	NR		NR	NR
	I	2040	1195 *		2010	1195 *		1975	1195 *		1975	1195 *
	J	NR	NR		NR	NR		NR	NR		NR	NR
	K	NR	NR		NR	NR		NR	NR		NR	NR
	L	NR	NR		NR	NR		NR	NR		NR	NR
	M	2045	1310		2045	1310		2045	1310		2045	1310
Mean Review Rating (including agree):		2049	1272		2034	1272		2016	1272		2016	1272
Std. Error (%)		0.3	3.9		0.7	3.9		1.2	3.9		1.2	3.9
% difference from review value		0.4	6.5		1.2	6.5		2.1	6.5		2.1	6.5

Appendix Table D.2 (continued)

'By-Report' Code Survey Responses: Orthopedic Surgery (Family C)

Service	ID	Responses		Service	Responses		Service	Responses		Service	Responses	
		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work
26552				26550			26557			26580		
Review Value =		2160	1340	Review Value =	1405	955	Review Value =	1370	760	Review Value =	1270	835
	A	1950	1500		1400	1100		1800	1400		NR	NR
	B	NR	NR		NR	NR		NR	NR		NR	NR
	C	NR	NR		NR	NR		NR	NR		NR	NR
	D	2160	1340 *		1405	955 *		1370	760 *		1270	835 *
	E	NR	NR		NR	NR		NR	NR		NR	NR
	F	NR	NR		NR	NR		NR	NR		NR	NR
	G	NR	NR		NR	NR		NR	NR		NR	NR
	H	2160	1340 *		1405	955 *		1370	760 *		1270	835 *
	I	2160	1340 *		1405	955 *		1370	760 *		1270	835 *
	J	NR	NR		NR	NR		NR	NR		NR	NR
	K	NR	NR		NR	NR		NR	NR		NR	NR
	L	NR	NR		NR	NR		NR	NR		NR	NR
	M	2155	1435		1485	1035		1370	760 *		1270	835 *
Mean Review Rating (including agree):		2115	1389		1420	998		1447	859		1270	835
Std. Error (%)		2.1	2.4		1.1	2.9		5.6	13.0		0.0	0.0
% difference from review value		-2.1	3.7		1.0	4.5		5.6	13.0		0.0	0.0

Appendix Table D.2 (continued)

'By-Report' Code Survey Responses: Orthopedic Surgery (Family C)

Service	ID	Responses		Service	Responses		Service	Responses		Service	Responses	
		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work
26555				26559			26590			26558		
Review Value =		1080	670	Review Value =	1010	640	Review Value =	995	635	Review Value =	985	640
	A	1300	1000		1200	800		NR	NR		700	550
	B	NR	NR		NR	NR		NR	NR		NR	NR
	C	NR	NR		NR	NR		NR	NR		NR	NR
	D	1150	740		1010	640 *		995	635 *		985	640 *
	E	NR	NR		NR	NR		NR	NR		NR	NR
	F	NR	NR		NR	NR		NR	NR		NR	NR
	G	NR	NR		NR	NR		NR	NR		NR	NR
	H	1080	670 *		1010	640 *		1300	750		985	640 *
	I	1080	670 *		1010	640 *		995	635 *		985	640 *
	J	NR	NR		NR	NR		NR	NR		NR	NR
	K	NR	NR		NR	NR		NR	NR		NR	NR
	L	NR	NR		NR	NR		NR	NR		NR	NR
	M	1080	690		1010	640 *		995	635 *		985	640 *
Mean Review Rating (including agree):		1135	745		1045	669		1064	662		920	621
Std. Error (%)		3.7	7.9		3.5	4.6		6.9	4.2		7.1	3.1
% difference from review value		5.1	11.2		3.5	4.6		6.9	4.2		-6.6	-3.0

Appendix Table D.2 (continued)

'By-Report' Code Survey Responses: Orthopedic Surgery (Family C)

Service	ID	Responses		Service	Responses	
		Total Work	Intra Work		Total Work	Intra Work
26585				26587		
Review Value =		970	625	Review Value =	750	445
	A	NR	NR		500	400
	B	NR	NR		NR	NR
	C	NR	NR		NR	NR
	D	970	625 *		850	545
	E	NR	NR		NR	NR
	F	NR	NR		NR	NR
	G	NR	NR		NR	NR
	H	1020	675		1090	680
	I	970	625 *		750	445 *
	J	NR	NR		NR	NR
	K	NR	NR		NR	NR
	L	NR	NR		NR	NR
	M	970	625 *		750	445 *
Mean Review Rating (including agree):		982	637		764	494
Std. Error (%)		1.3	1.9		13.4	9.9
% difference from review value		1.3	1.9		1.9	11.0

Appendix Table D.2 (continued)

'By-Report' Code Survey Responses: Orthopedic Surgery (Family D)

Service	ID	Responses		Service	Responses		Service	Responses	
		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work
24940				25915			28360		
Review Value =		1885	1255	Review Value =	1365	815	Review Value =	860	465
	A	NR	NR		NR	NR		NR	NR
	B	NR	NR		NR	NR		NR	NR
	C	NR	NR		NR	NR		NR	NR
	D	1885	1255 *		1365	815 *		1100	700
	E	NR	NR		NR	NR		NR	NR
	F	NR	NR		NR	NR		NR	NR
	G	NR	NR		NR	NR		NR	NR
	H	1885	1255 *		1365	815 *		1400	900
	I	1885	1255 *		1365	1100		860	600
	J	NR	NR		NR	NR		NR	NR
	K	NR	NR		NR	NR		NR	NR
	L	NR	NR		NR	NR		NR	NR
	M	NR	NR		NR	NR		NR	NR
Mean Review Rating (including agree):		1885	1255		1365	901		1098	723
Std. Error (%)		0.0	0.0		0.0	10.5		15.1	12.5
% difference from review value		0.0	0.0		0.0	10.5		27.7	55.5

Appendix Table D.2 (continued)

'By-Report' Code Survey Responses: Cardiothoracic Surgery (Family A)

Service	ID	Responses		Service	Responses		Service	Responses		Service	Responses	
		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work
33412				33415			33407			33417		
Review Value =		3205	2300	Review Value =	2485	1560	Review Value =	2305	1400	Review Value =	2230	1375
	A	3205	2300 *		2800	2000		2305	1400 *		2230	1375 *
	B	3205	2300 *		2485	1560 *		2305	1400 *		2230	1375 *
	C	3600	3000		2485	1800		2305	1400 *		2230	1375 *
	D	3745	2575		2800	1900		2305	1400 *		2230	1375 *
	E	3600	2600		2485	1560 *		2305	1400 *		2450	1550
	F	3205	2300 *		2485	1560 *		2305	1400 *		2230	1700
	G	3205	2300 *		2485	1560 *		2305	1400 *		2230	1375 *
	H	3205	2300 *		2485	1560 *		2305	1400 *		2230	1375 *
	I	3400	2400		2600	1600		2400	1600		2300	1400
	J	3800	2700		2700	1800		2540	1655		2265	1500
	K	3205	2300 *		2485	1560 *		2200	1600		2280	1600
	L	3500	2500		2485	1560 *		2305	1400 *		2500	1600
	M	NR	NR		NR	NR		NR	NR		NR	NR
	N	3205	2300 *		2485	1560 *		2305	1400 *		2230	1375 *
Mean Review Rating (including agree):		3384	2444		2556	1654		2321	1448		2278	1456
Std. Error (%)		1.9	2.4		1.3	2.5		0.9	1.8		1.1	2.2
% difference from review value		5.6	6.2		2.9	6.0		0.7	3.4		2.2	5.9

Appendix Table D.2 (continued)

'By-Report' Code Survey Responses: Cardiothoracic Surgery (Family A)

Service	ID	Responses	
		Total Work	Intra Work
33408			
Review Value =		1975	1000
	A	NR	NR
	B	1975	1000 *
	C	1975	1000 *
	D	2200	1300
	E	2100	1200
	F	1975	1000 *
	G	NR	NR
	H	1975	1000 *
	I	2000	1100
	J	2200	1300
	K	1975	1000 *
	L	2200	1300
	M	NR	NR
	N	1975	1000 *
Mean Review Rating (including agree):		2048	1102
Std. Error (%)		1.5	3.7
% difference from review value		3.7	10.2

Appendix Table D.2 (continued)

'By-Report' Code Survey Responses: Cardiothoracic Surgery (Family B)

Service	ID	Responses		Service	Responses		Service	Responses		Service	Responses	
		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work
33478				33476			33472			33470		
Review Value =		2345	1300	Review Value =	2145	1260	Review Value =	1940	965	Review Value =	1705	870
	A	NR	NR		NR	NR		1940	1175		NR	NR
	B	2345	1300 *		2145	1260 *		1940	965 *		1705	870 *
	C	3000	1500		2745	1860		1940	965 *		1705	870 *
	D	NR	NR		NR	NR		NR	NR		NR	NR
	E	2345	1300 *		2145	1260 *		1940	965 *		1705	870 *
	F	2345	1300 *		2145	1260 *		1940	965 *		1940	965
	G	NR	NR		NR	NR		NR	NR		NR	NR
	H	NR	NR		NR	NR		NR	NR		NR	NR
	I	2450	1600		2450	1600		2000	1000		1800	980
	J	2920	1700		2700	1500		2540	1655		NR	NR
	K	2345	1300 *		2145	1260 *		1600	965		1400	870
	L	2345	1300 *		2145	1260 *		1940	965 *		1705	870 *
	M	NR	NR		NR	NR		NR	NR		NR	NR
	N	2345	1300 *		2145	1260 *		1940	965 *		1705	870 *
Mean Review Rating (including agree):		2482	1393		2295	1378		1961	1042		1702	895
Std. Error (%)		3.4	3.7		3.6	4.9		3.5	5.6		3.3	1.8
% difference from review value		5.8	7.1		7.0	9.3		1.1	8.0		-0.2	2.8

Appendix Table D.2 (continued)

'By-Report' Code Survey Responses: Cardiothoracic Surgery (Family C)

Service	ID	Responses		Service	Responses		Service	Responses		Service	Responses	
		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work
33649				33696			33694			33692		
Review Value =		3655	2110	Review Value =	3320	2150	Review Value =	3220	2075	Review Value =	3105	2000
	A	NR	NR		NR	NR		NR	NR		NR	NR
	B	NR	NR		NR	NR		NR	NR		NR	NR
	C	4255	2760		3720	2400		3720	2475		3705	2600
	D	NR	NR		NR	NR		NR	NR		NR	NR
	E	3655	2110 *		3320	2150 *		3220	2075 *		3105	2000 *
	F	3655	2110 *		3320	2150 *		3220	2075 *		3105	2000 *
	G	NR	NR		NR	NR		NR	NR		NR	NR
	H	NR	NR		NR	NR		NR	NR		NR	NR
	I	3700	2200		3500	2200		3500	2100		3300	2050
	J	NR	NR		3800	2700		3700	2600		3300	2300
	K	3655	2550		3320	2300		3220	2200		3105	2150
	L	3655	2110 *		3320	2150 *		3220	2075 *		3105	2000 *
	M	NR	NR		NR	NR		NR	NR		NR	NR
	N	3655	2110 *		3320	2150 *		3220	2075 *		3105	2000 *
Mean Review Rating (including agree):		3742	2266		3448	2268		3371	2201		3223	2129
Std. Error (%)		2.2	4.3		2.0	2.9		2.4	3.3		2.2	3.4
% difference from review value		2.4	7.4		3.8	5.5		4.7	6.1		3.8	6.4

Appendix Table D.2 (continued)

'By-Report' Code Survey Responses: Cardiothoracic Surgery (Family C)

Service	ID	Responses		Service	Responses		Service	Responses		Service	Responses	
		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work
33665				33670			33660			33684		
Review Value =		3075	1965	Review Value =	3065	2235	Review Value =	3030	1915	Review Value =	2980	1845
	A	NR	NR		NR	NR		NR	NR		NR	NR
	B	NR	NR		NR	NR		NR	NR		NR	NR
	C	3075	1965 *		3065	2235 *		3030	1915 *		2980	1845 *
	D	NR	NR		NR	NR		NR	NR		NR	NR
	E	3075	1965 *		3350	2235		3030	1915 *		2980	1845 *
	F	3075	1965 *		3065	2235 *		3030	1915 *		2980	1845 *
	G	NR	NR		NR	NR		NR	NR		NR	NR
	H	NR	NR		NR	NR		NR	NR		NR	NR
	I	3200	2000		3200	2500		3100	2000		3000	1900
	J	3800	2700		NR	NR		NR	NR		3700	2600
	K	3400	2300		3600	2450		3030	2300		NR	NR
	L	3075	1965 *		3065	2235 *		3030	1915 *		2800	1750
	M	NR	NR		NR	NR		NR	NR		NR	NR
	N	3075	1965 *		3065	2235 *		3030	1915 *		2980	1845 *
Mean Review Rating (including agree):		3213	2090		3196	2301		3040	1978		3049	1931
Std. Error (%)		2.7	4.2		2.4	1.9		0.3	2.6		3.4	5.2
% difference from review value		4.5	6.4		4.3	3.0		0.3	3.3		2.3	4.7

Appendix Table D.2 (continued)

'By-Report' Code Survey Responses: Cardiothoracic Surgery (Family C)

Service	ID	Responses		Service	Responses		Service	Responses	
		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work
33688				33647			33645		
Review Value =		2860	1740	Review Value =	2750	1795	Review Value =	2260	1360
	A	NR	NR		NR	NR		NR	NR
	B	NR	NR		NR	NR		NR	NR
	C	2860	1740 *		2750	1795 *		2260	1360 *
	D	NR	NR		NR	NR		NR	NR
	E	3000	1875		2750	1795 *		2260	1360 *
	F	2860	1740 *		2750	1795 *		2260	1360 *
	G	NR	NR		NR	NR		NR	NR
	H	NR	NR		NR	NR		NR	NR
	I	2900	1800		2800	1800		2500	1500
	J	3800	2700		3100	2100		3000	2000
	K	2860	1740 *		2750	1795 *		2260	1360 *
	L	2900	1850		2750	1795 *		2260	1360 *
	M	NR	NR		NR	NR		NR	NR
	N	2860	1740 *		2750	1795 *		2260	1360 *
Mean Review Rating (including agree):		2992	1878		2798	1831		2371	1445
Std. Error (%)		3.5	5.4		1.5	2.0		3.6	4.9
% difference from review value		4.6	7.9		1.7	2.0		4.9	6.2

Appendix Table D.2 (continued)

'By-Report' Code Survey Responses: Cardiothoracic Surgery (Family C)

Service	ID	Responses		Service	Responses		Service	Responses	
		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work
33681				33641			33690		
Review Value =		2195	1315	Review Value =	1980	1200	Review Value =	1600	695
	A	NR	NR		NR	NR		NR	NR
	B	NR	NR		NR	NR		NR	NR
	C	2195	1315 *		1980	1200 *		1600	695 *
	D	NR	NR		NR	NR		NR	NR
	E	2500	1500		1980	1200 *		1600	695 *
	F	2195	1315 *		1980	1200 *		1600	695 *
	G	NR	NR		NR	NR		NR	NR
	H	NR	NR		NR	NR		NR	NR
	I	2400	1400		2000	1250		1800	600
	J	3100	2100		3000	2100		2000	1000
	K	2300	1600		1800	1200		1500	800
	L	2195	1315 *		1980	1200 *		1900	1000
	M	NR	NR		NR	NR		NR	NR
	N	2195	1315 *		1980	1200 *			
Mean Review Rating (including agree):		2369	1464		2063	1294		1692	761
Std. Error (%)		4.3	5.9		5.6	7.2		3.7	6.8
% difference from review value		7.9	11.3		4.2	7.8		5.8	9.4

Appendix Table D.2 (continued)

'By-Report' Code Survey Responses: Cardiothoracic Surgery (Family D)

Service	ID	Responses		Service	Responses		Service	Responses	
		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work
33710				33702			33720		
Review Value =		3245	2185	Review Value =	2915	1860	Review Value =	2850	1950
	A	3245	2185 *		2915	1860 *		2850	1950 *
	B	3245	2185 *		2915	1860 *		2850	1950 *
	C	3245	2185 *		2915	1860 *		2850	1950 *
	D	NR	NR		NR	NR		NR	NR
	E	3245	2185 *		2915	1860 *		2850	1950 *
	F	3245	2185 *		2915	1860 *		2850	1950 *
	G	3245	2185 *		2915	1860 *		2850	1950 *
	H	3245	2185 *		2915	1860 *		2850	1950 *
	I	3500	2300		3000	2000		2900	2200
	J	3245	2185 *		2915	1860 *		2850	1950 *
	K	3245	2300		2915	2000		3400	2400
	L	3245	2185 *		2915	1860 *		2850	1950 *
	M	NR	NR		NR	NR		NR	NR
	N	3245	2185 *		2915	1860 *		2850	1950 *
Mean Review Rating (including agree):		3266	2204		2922	1883		2896	2004
Std. Error (%)		0.6	0.6		0.2	0.8		1.5	1.9
% difference from review value		0.6	0.9		0.2	1.2		1.6	2.8

Appendix Table D.2 (continued)

'By-Report' Code Survey Responses: Cardiothoracic Surgery (Family E)

Service	ID	Responses		Service	Responses		Service	Responses		Service	Responses	
		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work
33766				33737			33762			33764		
Review Value =		1970	975	Review Value =	1965	930	Review Value =	1950	850	Review Value =	1895	845
	A	NR	NR		NR	NR		NR	NR		NR	NR
	B	NR	NR		NR	NR		NR	NR		NR	NR
	C	1970	975 *		1965	930 *		1950	850 *		1895	845 *
	D	NR	NR		NR	NR		NR	NR		NR	NR
	E	2300	975		2325	930		NR	NR		1975	900
	F	1970	975 *		1965	930 *		1950	850 *		1895	845 *
	G	NR	NR		NR	NR		NR	NR		NR	NR
	H	NR	NR		NR	NR		NR	NR		NR	NR
	I	2000	1000		1980	1000		2000	900		1900	900
	J	NR	NR		NR	NR		NR	NR		NR	NR
	K	1900	900		1850	875		1960	950		1990	1000
	L	1970	975 *		1965	930 *		1950	850 *		1895	845 *
	M	NR	NR		NR	NR		NR	NR		NR	NR
	N	1970	975 *		1965	930 *		1950	850 *		1895	845 *
Mean Review Rating (including agree):		2008	967		1998	932		1960	874		1920	881
Std. Error (%)		2.4	1.3		2.7	1.5		0.4	1.9		0.8	2.4
% difference from review value		1.9	-0.8		1.7	0.2		0.5	2.8		1.3	4.3

Appendix Table D.2 (continued)

'By-Report' Code Survey Responses: Cardiothoracic Surgery (Family E)

Service	ID	Responses		Service	Responses		Service	Responses		Service	Responses	
		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work
33735				33755			33750			33739		
Review Value =		1880	830	Review Value =	1880	830	Review Value =	1745	845	Review Value =	1585	685
	A	NR	NR		NR	NR		NR	NR		NR	NR
	B	NR	NR		NR	NR		NR	NR		NR	NR
	C	1880	830 *		1880	830 *		1745	845 *		NR	NR
	D	NR	NR		NR	NR		NR	NR		NR	NR
	E	2350	950		1950	875		2000	1000		NR	NR
	F	1880	830 *		1880	830 *		1745	845 *		1585	685 *
	G	NR	NR		NR	NR		NR	NR		NR	NR
	H	NR	NR		NR	NR		NR	NR		NR	NR
	I	1890	850		1890	850		1800	900		1600	700
	J	NR	NR		NR	NR		NR	NR		NR	NR
	K	1850	880		1970	950		1875	890		NR	NR
	L	1880	830 *		1880	830 *		1745	845 *		1585	685 *
	M	NR	NR		NR	NR		NR	NR		NR	NR
	N	1880	830 *		1880	830 *		1745	845 *		1585	685 *
Mean Review Rating (including agree):		1938	856		1904	855		1806	880		1589	689
Std. Error (%)		3.3	1.9		0.8	1.9		2.0	2.4		0.2	0.5
% difference from review value		3.1	3.2		1.3	3.1		3.5	4.1		0.2	0.5

Appendix Table D.2 (continued)

'By-Report' Code Survey Responses: Cardiothoracic Surgery (Family E)

Service	ID	Responses	
		Total Work	Intra Work
33738			
Review Value =		1245	480
	A	NR	NR
	B	NR	NR
	C	NR	NR
	D	NR	NR
	E	NR	NR
	F	1245	480 *
	G	NR	NR
	H	NR	NR
	I	1500	500
	J	NR	NR
	K	NR	NR
	L	1245	480 *
	M	NR	NR
	N	1245	480 *
Mean Review Rating (including agree):		1304	485
Std. Error (%)		4.8	1.0
% difference from review value		4.8	1.0

Appendix Table D.2 (continued)

'By-Report' Code Survey Responses: Cardiothoracic Surgery (Family F)

Service	ID	Responses		Service	Responses		Service	Responses		Service	Responses	
		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work
33780				33781			33779			33776		
Review Value =		3165	2000	Review Value =	3165	2000	Review Value =	3145	1980	Review Value =	3050	1955
	A	NR	NR		NR	NR		NR	NR		NR	NR
	B	NR	NR		NR	NR		NR	NR		NR	NR
	C	4165	3000		4165	3000		4145	3000		4050	3000
	D	NR	NR		NR	NR		NR	NR		NR	NR
	E	3765	2600		3765	2600		3715	2550		3200	2100
	F	3165	2000 *		3165	2000 *		3145	1980 *		3050	1955 *
	G	NR	NR		NR	NR		NR	NR		NR	NR
	H	NR	NR		NR	NR		NR	NR		NR	NR
	I	3200	2050		3200	2050		3180	2000		3100	1980
	J	NR	NR		NR	NR		NR	NR		NR	NR
	K	NR	NR		NR	NR		NR	NR		3050	1955 *
	L	3165	2000 *		3165	2000 *		3145	1980 *		3050	1955 *
	M	NR	NR		NR	NR		NR	NR		NR	NR
	N	3165	2000 *		3165	2000 *		3145	1980 *		3050	1955 *
Mean Review Rating (including agree):		3417	2245		3417	2245		3392	2217		3205	2103
Std. Error (%)		5.0	7.4		5.0	7.4		4.9	7.6		4.0	6.2
% difference from review value		8.0	12.2		8.0	12.2		7.9	12.0		5.1	7.6

Appendix Table D.2 (continued)

'By-Report' Code Survey Responses: Cardiothoracic Surgery (Family F)

Service	ID	Responses		Service	Responses		Service	Responses		Service	Responses	
		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work
33775				33777			33774			33778		
Review Value =		3010	1925	Review Value =	2905	1925	Review Value =	2815	1735	Review Value =	2705	1790
	A	NR	NR		NR	NR		2070	1400		NR	NR
	B	NR	NR		NR	NR		NR	NR		NR	NR
	C	4010	3000		3905	2925		3815	2735		3705	2790
	D	NR	NR		NR	NR		NR	NR		NR	NR
	E	3150	2050		3100	2025		2950	2000		3650	2500
	F	3010	1925 *		2905	1925 *		2815	1735 *		2705	1790 *
	G	NR	NR		NR	NR		NR	NR		NR	NR
	H	NR	NR		NR	NR		NR	NR		NR	NR
	I	3050	1950		3050	1950		2900	1800		2800	1800
	J	NR	NR		NR	NR		NR	NR		NR	NR
	K	3010	1925 *		2905	1925 *		2815	1735 *		NR	NR
	L	3010	1925 *		2905	1925 *		2815	1735 *		2705	1790 *
	M	NR	NR		NR	NR		NR	NR		NR	NR
	N	3010	1925 *		2905	1925 *		2815	1735 *		2705	1790 *
Mean Review Rating (including agree):		3162	2073		3080	2063		2841	1828		3014	2040
Std. Error (%)		4.1	6.4		4.2	6.0		6.0	6.9		6.5	8.6
% difference from review value		5.1	7.7		6.0	7.1		0.9	5.4		11.4	13.9

Appendix Table D.2 (continued)

'By-Report' Code Survey Responses: Cardiothoracic Surgery (Family G)

Service	ID	Responses		Service	Responses		Service	Responses		Service	Responses	
		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work
33814				33852			33855			33851		
Review Value =		2225	1270	Review Value =	2165	1265	Review Value =	2125	1270	Review Value =	2120	1170
	A	NR	NR		NR	NR		NR	NR		NR	NR
	B	NR	NR		NR	NR		NR	NR		NR	NR
	C	2225	1270 *		2765	1865		4125	2270		2120	1170 *
	D	NR	NR		NR	NR		NR	NR		NR	NR
	E	2450	1500		2165	1265 *		3600	2300		2120	1170 *
	F	2225	1270 *		2165	1265 *		2125	1270 *		2120	1170 *
	G	NR	NR		NR	NR		NR	NR		NR	NR
	H	NR	NR		NR	NR		NR	NR		NR	NR
	I	2300	1300		2200	1280		2200	1280		2200	1200
	J	NR	NR		NR	NR		NR	NR		NR	NR
	K	2150	1250		2250	1300		NR	NR		2200	1275
	L	2225	1270 *		2900	1800		2850	1750		2120	1170 *
	M	NR	NR		NR	NR		NR	NR		NR	NR
	N	2225	1270 *		2165	1265 *		2125	1270 *		2120	1170 *
Mean Review Rating (including agree):		2255	1302		2356	1414		2737	1632		2143	1189
Std. Error (%)		1.6	2.4		4.9	6.9		12.6	12.5		0.7	1.2
% difference from review value		1.4	2.5		8.8	11.8		28.8	28.5		1.1	1.6

Appendix Table D.2 (continued)

'By-Report' Code Survey Responses: Cardiothoracic Surgery (Family G)

Service	ID	Responses		Service	Responses		Service	Responses		Service	Responses	
		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work
33845				33813			33840			33803		
Review Value =		2080	1150	Review Value =	1905	1015	Review Value =	1880	1055	Review Value =	1720	1010
	A	NR	NR		NR	NR		NR	NR		NR	NR
	B	NR	NR		1905	1015 *		1905	1055		1720	1010 *
	C	2080	1150 *		NR	NR		1880	1055 *		1720	1010 *
	D	NR	NR		NR	NR		NR	NR		NR	NR
	E	2080	1150 *		NR	NR		1985	1055		1720	1010 *
	F	2080	1150 *		1905	1015 *		1880	1055 *		1720	1010 *
	G	NR	NR		NR	NR		NR	NR		NR	NR
	H	NR	NR		NR	NR		NR	NR		NR	NR
	I	2100	1170		2000	1100		1900	1200		1800	1100
	J	2500	1400		NR	NR		2000	1200		NR	NR
	K	2100	1200		1800	NR		1700	NR		1500	NR
	L	2080	1150 *		1905	1015 *		1880	1055 *		1720	1010 *
	M	NR	NR		NR	NR		NR	NR		NR	NR
	N	2080	1150 *		1905	1015 *		1880	1055 *		1720	1010 *
Mean Review Rating (including agree):		2133	1187		1924	1031		1909	1086		1731	1022
Std. Error (%)		2.3	2.4		1.0	1.6		0.8	1.9		0.7	1.2
% difference from review value		2.6	3.3		1.0	1.6		1.6	2.9		0.7	1.2

Appendix Table D.2 (continued)

'By-Report' Code Survey Responses: Cardiothoracic Surgery (Family G)

Service	ID	Responses		Service	Responses		Service	Responses		Service	Responses	
		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work
33802				33824			33822			33830		
Review Value =		1510	820	Review Value =	1430	745	Review Value =	1220	685	Review Value =	1220	430
	A	NR	NR		NR	NR		NR	NR		NR	NR
	B	1510	820 *		1430	745 *		1220	685 *		1220	430 *
	C	1510	820 *		1430	745 *		1220	685 *		1220	430 *
	D	NR	NR		NR	NR		NR	NR		NR	NR
	E	1510	820 *		1650	950		1425	875		1000	430
	F	1510	820 *		1430	745 *		1220	685 *		1220	430 *
	G	NR	NR		NR	NR		NR	NR		NR	NR
	H	NR	NR		NR	NR		NR	NR		NR	NR
	I	1600	900		1500	800		1300	700		1300	500
	J	1800	1100		1750	1000		1650	900		1650	900
	K	1200	NR		1100	NR		1000	NR		600	NR
	L	1510	820 *		1430	745 *		1220	685 *		1220	430 *
	M	NR	NR		NR	NR		NR	NR		NR	NR
	N	1510	820 *		1430	745 *		1220	685 *		1220	430 *
Mean Review Rating (including agree):		1555	861		1502	804		1302	733		1246	481
Std. Error (%)		2.2	3.8		2.9	4.4		4.0	4.3		5.0	9.6
% difference from review value		3.0	5.0		5.0	7.9		6.7	7.0		2.1	11.8

Appendix Table D.2 (continued)

'By-Report' Code Survey Responses: Cardiothoracic Surgery (Family G)

Service	ID	Responses	
		Total Work	Intra Work
33820			
Review Value =		940	505
	A	NR	NR
	B	940	505 *
	C	940	505 *
	D	NR	NR
	E	1100	505
	F	940	505 *
	G	NR	NR
	H	NR	NR
	I	1000	600
	J	1400	800
	K	900	NR
	L	940	505 *
	M	NR	NR
	N	940	505 *
Mean Review Rating (including agree):		1015	547
Std. Error (%)		5.1	6.0
% difference from review value		8.0	8.2

Appendix Table D.2 (continued)

'By-Report' Code Survey Responses: Cardiothoracic Surgery (Family I)

Service	ID	Responses		Service	Responses		Service	Responses		Service	Responses	
		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work
33350				33786			33575			32820		
Review Value =		2655	1630	Review Value =	2605	1685	Review Value =	2595	1540	Review Value =	2270	1440
	A	NR	NR		NR	NR		NR	NR		NR	NR
	B	2655	1630 *		NR	NR		2595	1540 *		2270	1440 *
	C	2655	1630 *		3605	2785		2595	1540 *		3270	2440
	D	NR	NR		NR	NR		NR	NR		NR	NR
	E	2500	1800		3300	2300		NR	NR		NR	NR
	F	2655	1630 *		2605	1685 *		2595	1540 *		2270	1440 *
	G	NR	NR		NR	NR		NR	NR		NR	NR
	H	NR	NR		NR	NR		NR	NR		NR	NR
	I	2700	1700		2650	1750		2600	1600		2300	1500
	J	NR	NR		NR	NR		2900	1900		NR	NR
	K	2200	1630		2650	1685		2350	1540		2150	1440
	L	2655	1630 *		2605	1685 *		2595	1540 *		2270	1440 *
	M	NR	NR		NR	NR		NR	NR		NR	NR
	N	2655	1630 *		2605	1685 *		2595	1540 *		2270	1440 *
Mean Review Rating (including agree):		2579	1659		2836	1903		2600	1589		2377	1562
Std. Error (%)		2.4	1.3		5.3	8.0		2.0	2.6		5.5	7.7
% difference from review value		-2.9	1.8		8.9	12.9		0.2	3.2		4.7	8.5

Appendix Table D.2 (continued)

'By-Report' Code Survey Responses: Cardiothoracic Surgery (Family I)

Service	ID	Responses		Service	Responses		Service	Responses	
		Total Work	Intra Work		Total Work	Intra Work		Total Work	Intra Work
33730				33788			33960		
Review Value =		2250	1545	Review Value =	2030	1260	Review Value =	1565	1095
	A	NR	NR		NR	NR		NR	NR
	B	NR	NR		NR	NR		1565	1095 *
	C	3250	2545		2030	1260 *		1565	1095 *
	D	NR	NR		NR	NR		NR	NR
	E	2545	1545		2300	1400		NR	NR
	F	2250	1545 *		2030	1260 *		1565	1095 *
	G	NR	NR		NR	NR		NR	NR
	H	NR	NR		NR	NR		NR	NR
	I	2300	1600		2100	1300		1600	1100
	J	NR	NR		NR	NR		2000	1550
	K	2400	1545		2100	1260		1500	600
	L	2250	1545 *		2030	1260 *		1565	1095 *
	M	NR	NR		NR	NR		NR	NR
	N	2250	1545 *		2030	1260 *		1565	1095 *
Mean Review Rating (including agree):		2443	1667		2087	1285		1610	1061
Std. Error (%)		5.2	7.3		1.7	1.5		3.2	9.6
% difference from review value		8.6	7.9		2.8	2.0		2.9	-3.1

Key: * = physician agreed with total and intra review work values for service
NR = physician did not rate service

Appendix Table D.3

Review of Intra-Service Work Values for 'By-Report' CPT Codes: Neurosurgery

(Summary Statistics from Phase III Surveys)

CPT	Service	Pre-Review* Intra Work	Pre-Review** Std. Error	N
Family A --				
61530	REMOVAL OF BRAIN LESION	3380	5.1	15
61564	EXCISION OF SKULL TUMOR	1800	4.6	12
61559	EXCISION OF SKULL/SUTURES	1635	6.5	6
61563	EXCISION OF SKULL TUMOR	1520	2.0	12
61558	EXCISION OF SKULL/SUTURES	1450	7.6	9
61557	INCISE SKULL/SUTURES	1395	3.6	9
61556	INCISE SKULL/SUTURES	1325	2.9	9
Family B --				
61686	INTRACRANIAL VESSEL SURGERY	3910	10.8	18
61682	INTRACRANIAL VESSEL SURGERY	3445	8.8	18
61684	INTRACRANIAL VESSEL SURGERY	3000	2.7	18
61702	INNER SKULL VESSEL SURGERY	3100	3.4	18
61692	INTRACRANIAL VESSEL SURGERY	2890	6.3	16
61680	INTRACRANIAL VESSEL SURGERY	2810	2.2	18
Family C --				
62120	REPAIR SKULL CAVITY LESION	1510	8.2	12
62117	REDUCTION OF SKULL DEFECT	1035	4.5	5
62116	REDUCTION OF SKULL DEFECT	935	1.9	5
62115	REDUCTION OF SKULL DEFECT	810	12.2	5
Family D --				
63706	REPAIR OF SPINAL HERNIATION	1135	11.3	13
63704	REPAIR OF SPINAL HERNIATION	890	11.7	13
63702	REPAIR OF SPINAL HERNIATION	840	11.0	13
63700	REPAIR OF SPINAL HERNIATION	660	10.4	13

*Mean phase III rating of intra-service work, on common scale.
**Summary statistics from phase III rating of intra-service work.

Appendix Table D.3 (continued)

Review of Intra-Service Work Values for 'By-Report' CPT Codes:
General Surgery

(Summary Statistics from Phase III Surveys)

CPT	Service	Pre-Review* Intra Work	Pre-Review** Std. Error	N
35549	ARTERY BYPASS GRAFT	1425	8.5	8
35548	ARTERY BYPASS GRAFT	1295	9.6	7
35162	REPAIR ARTERY RUPTURE	1050	10.1	6
35161	REPAIR DEFECT OF ARTERY	970	7.9	8
35870	REPAIR VESSEL GRAFT DEFECT	860	36.9	7
34520	CROSS-OVER VEIN GRAFT	600	11.5	4
34510	TRANSPOSITION OF VEIN VALVE	505	24.2	4
34530	LEG VEIN FUSION	445	22.6	5
34501	REPAIR VALVE, FEMORAL VEIN	410	41.3	4
36835	ARTERY TO VEIN SHUNT	325	?.?	?
36845	FUSION WITH MANDRIL	325	?.?	?
36840	INSERT MANDRIL	150	?.?	?

*Mean phase III rating of intra-service work, on common scale.
**Summary statistics from phase III rating of intra-service work.

Appendix Table D.3 (continued)

Review of Intra-Service Work Values for 'By-Report' CPT Codes: Otolaryngology

(Summary Statistics from Phase III Surveys)

CPT	Service	Pre-Review* Intra Work	Pre-Review** Std. Error	N
31582	REVISION OF LARYNX	750	6.6	12
31590	REINNERVATE LARYNX	680	5.4	10
31588	REVISION OF LARYNX	700	13.8	12
30450	REVISION OF NOSE	715	10.0	10
30420	RECONSTRUCTION OF NOSE	650	6.1	17
30410	RECONSTRUCTION OF NOSE	635	8.4	10
30400	RECONSTRUCTION OF NOSE	595	7.9	10
31755	REPAIR OF WINDPIPE	310	11.0	9
30435	REVISION OF NOSE	500	11.6	10
30430	REVISION OF NOSE	360	13.8	10

*Mean phase III rating of intra-service work, on common scale.
**Summary statistics from phase III rating of intra-service work.

Appendix Table D.3 (continued)

Review of Intra-Service Work Values for 'By-Report' CPT Codes:
Orthopedic Surgery

(Summary Statistics from Phase III Surveys)

CPT	Service	Pre-Review* Intra Work	Pre-Review** Std. Error	N
Family A --				
20808	REPLANTATION, HAND, COMPLETE	1935	16.5	5
20805	REPLANT FOREARM, COMPLETE	1910	14.9	5
20812	REPLANTATION, HAND, PARTIAL	1840	14.2	5
20806	REPLANTATION,FOREARM,PARTIAL	1770	9.2	5
20802	REPLANTATION, ARM, COMPLETE	1745	12.0	5
20832	REPLANTATION, LEG, COMPLETE	1630	5.6	4
20838	REPLANTATION, FOOT, COMPLETE	1590	13.7	4
20804	REPLANTATION, ARM, PARTIAL	1580	7.6	5
20824	REPLANTATION THUMB, COMPLETE	1460	8.4	5
20834	REPLANTATION, LEG, PARTIAL	1175	33.0	5
20840	REPLANTATION, FOOT, PARTIAL	1145	38.6	5
20826	REPLANTATION, THUMB, PARTIAL	1420	8.0	5
20816	REPLANTATION DIGIT, COMPLETE	1360	9.3	5
20820	REPLANTATION, DIGIT, PARTIAL	1330	8.2	5
20827	REPLANTATION THUMB, COMPLETE	1285	12.6	5
20822	REPLANTATION DIGIT, COMPLETE	1245	15.2	5
20828	REPLANTATION, THUMB, PARTIAL	1260	10.8	5
20823	REPLANTATION, DIGIT, PARTIAL	1220	13.0	5
Family B --				
20955	MICROVASCULAR FIBULA GRAFT	1235	5.5	4
20962	MICROVASCULAR BONE GRAFT	1275	11.3	8
20970	BONE-SKIN GRAFT, PELVIS	1235	5.5	4
20973	BONE-SKIN GRAFT, GREAT TOE	1245	7.0	3
20960	MICROVASCULAR RIB GRAFT	1195	6.9	3
20969	BONE-SKIN GRAFT	1195	13.0	2
20971	BONE-SKIN GRAFT, RIB	1195	6.9	3
20972	BONE-SKIN GRAFT, METATARSAL	1195	6.9	3

*Mean phase III rating of intra-service work, on common scale.
**Summary statistics from phase III rating of intra-service work.

Appendix Table D.3 (continued)

Review of Intra-Service Work Values for 'By-Report' CPT Codes: Orthopedic Surgery

(Summary Statistics from Phase III Surveys)

CPT	Service	Pre-Review* Intra Work	Pre-Review** Std. Error	N
Family C --				
26552	CONSTRUCT THUMB REPLACEMENT	1340	9.8	5
26550	CONSTRUCT THUMB REPLACEMENT	955	12.0	8
26557	CONSTRUCT FINGER REPLACEMENT	760	.	2
26580	REPAIR HAND DEFORMITY	835	24.8	2
26555	POSITIONAL CHANGE OF FINGER	670	18.5	5
26559	ADDED FINGER SURGERY	640	.	2
26590	REPAIR FINGER DEFORMITY	635	20.9	3
26558	ADDED FINGER SURGERY	640	.	2
26585	REPAIR FINGER DEFORMITY	625	1.8	3
26587	RECONSTRUCT EXTRA FINGER	445	0.9	2
Family D --				
24940	REVISION OF UPPER ARM	1255	32.8	3
25915	AMPUTATION OF FOREARM	815	13.0	7
28360	RECONSTRUCT CLEFT FOOT	465	51.1	3

*Mean phase III rating of intra-service work, on common scale.
**Summary statistics from phase III rating of intra-service work.

Appendix Table D.3 (continued)

Review of Intra-Service Work Values for 'By-Report' CPT Codes:
Cardiothoracic Surgery

(Summary Statistics from Phase III Surveys)

CPT	Service	Pre-Review* Intra Work	Pre-Review** Std. Error	N
Family A --				
33412	REPLACEMENT OF AORTIC VALVE	2300	4.4	8
33415	REVISION, SUBVALVULAR TISSUE	1560	1.1	10
33407	REVISION OF AORTIC VALVE	1400	1.3	10
33417	REPAIR OF AORTIC VALVE	1375	5.1	10
33408	REVISION OF AORTIC VALVE	1000	9.2	7
Family B --				
33478	REVISION OF HEART CHAMBER	1300	3.3	8
33476	REVISION OF HEART CHAMBER	1260	4.2	7
33472	REVISION OF PULMONARY VALVE	965	6.2	8
33470	REVISION OF PULMONARY VALVE	870	2.5	8
Family C --				
33649	REPAIR TRICUSPID DEFECT	2110	7.2	7
33696	REPAIR OF HEART DEFECTS	2150	3.3	9
33694	REPAIR OF HEART DEFECTS	2075	3.6	9
33692	REPAIR OF HEART DEFECTS	2000	35.7	9
33665	REPAIR OF HEART DEFECTS	1965	5.6	9
33670	REPAIR OF HEART CHAMBERS	2235	46.6	8
33660	REPAIR OF HEART DEFECTS	1915	5.8	9
33684	REPAIR HEART SEPTUM DEFECT	1845	3.0	9
33688	REPAIR HEART SEPTUM DEFECT	1740	1.9	9
33647	REPAIR HEART SEPTUM DEFECTS	1795	3.1	10
33645	REVISION OF HEART VEINS	1360	4.9	10
33681	REPAIR HEART SEPTUM DEFECT	1315	17.4	10
33641	REPAIR HEART SEPTUM DEFECT	1200	20.9	11
33690	REINFORCE PULMONARY ARTERY	695	14.6	9
Family D --				
33710	REPAIR OF HEART DEFECTS	2185	4.3	10
33702	REPAIR OF HEART DEFECTS	1860	1.4	10
33720	REPAIR OF HEART DEFECT	1950	33.0	11

*Mean phase III rating of intra-service work, on common scale.
**Summary statistics from phase III rating of intra-service work.

Appendix Table D.3 (continued)

Review of Intra-Service Work Values for 'By-Report' CPT Codes:
Cardiothoracic Surgery

(Summary Statistics from Phase III Surveys)

CPT	Service	Pre-Review* Intra Work	Pre-Review** Std. Error	N
Family E --				
33766	MAJOR VESSEL SHUNT	975	19.5	9
33737	REVISION OF HEART CHAMBER	930	6.2	8
33762	MAJOR VESSEL SHUNT	850	4.5	7
33764	MAJOR VESSEL SHUNT & GRAFT	845	3.1	8
33735	REVISION OF HEART CHAMBER	830	2.4	8
33755	MAJOR VESSEL SHUNT	830	2.6	8
33750	MAJOR VESSEL SHUNT	845	15.5	10
33739	REVISION OF HEART CHAMBER	685	25.8	6
33738	REVISION OF HEART CHAMBER	480	34.4	7
Family F --				
33780	REPAIR GREAT VESSELS DEFECT	2000	17.3	5
33781	REPAIR GREAT VESSELS DEFECT	2000	17.3	5
33779	REPAIR GREAT VESSELS DEFECT	1980	16.9	5
33776	REPAIR GREAT VESSELS DEFECT	1955	12.4	7
33775	REPAIR GREAT VESSELS DEFECT	1925	12.5	7
33777	REPAIR GREAT VESSELS DEFECT	1925	12.1	7
33774	REPAIR GREAT VESSELS DEFECT	1735	14.5	7
33778	REPAIR GREAT VESSELS DEFECT	1790	20.1	5
Family G --				
33814	REPAIR SEPTAL DEFECT	1270	12.6	8
33852	REPAIR SEPTAL DEFECT	1265	14.9	8
33855	REPAIR SEPTAL DEFECT	1270	35.4	4
33851	REMOVE AORTA CONSTRICTION	1170	3.4	9
33845	REMOVE AORTA CONSTRICTION	1150	5.8	9
33813	REPAIR SEPTAL DEFECT	1015	15.4	4
33840	REMOVE AORTA CONSTRICTION	1055	5.8	9
33803	REPAIR VESSEL DEFECT	1010	3.7	8
33802	REPAIR VESSEL DEFECT	820	5.6	8
33824	REVISE MAJOR VESSEL	745	6.5	10
33822	REVISE MAJOR VESSEL	685	25.4	11
33830	REVISE MAJOR VESSEL	430	20.2	9
33820	REVISE MAJOR VESSEL	505	18.9	11

*Mean phase III rating of intra-service work, on common scale.
**Summary statistics from phase III rating of intra-service work.

Appendix Table D.3 (continued)

Review of Intra-Service Work Values for 'By-Report' CPT Codes:
Cardiothoracic Surgery

(Summary Statistics from Phase III Surveys)

CPT	Service	Pre-Review* Intra Work	Pre-Review** Std. Error	N
Family I --				
33350	REPAIR MAJOR BLOOD VESSEL(S)	1630	5.0	9
33786	REPAIR ARTERIAL TRUNK	1685	16.2	5
33575	REVISE CORONARY CIRCULATION	1540	8.3	7
32820	RECONSTRUCT INJURED CHEST	1440	40.2	9
33730	REPAIR HEART-VEIN DEFECT(S)	1545	11.9	7
33788	REVISION OF PULMONARY ARTERY	1260	25.2	6
33960	EXTERNAL CIRCULATION ASSIST	1095	14.8	7

*Mean phase III rating of intra-service work, on common scale.
**Summary statistics from phase III rating of intra-service work.

Appendix E

Appendix Tables E.1 and E.2
Phase III Results for Multiple Procedures

Table E.1 Measuring the Total-Service Work of Secondary Codes

During phase III, we identified several codes as being "secondary codes." The services described by these codes are not performed independently, but are optional or additional services for a primary procedure or operation. An example of a secondary code is an arthrodesis, anterior or anterolateral, each additional segment (22585). The primary procedure for this code is an arthrodesis, anterior interbody technique; cervical below C2, with bone graft, single interspace.

We found that it was difficult to measure the work of secondary codes because they could not be described in an independent vignette. The work for the secondary code needed to be measured in conjunction with that of its primary service. Therefore, to do this, we developed a three-step process: first, we measured the work of a vignette describing the primary procedure, second, we measured the work of a vignette describing the primary procedure performed in conjunction with the secondary code. We then took the difference between the total-service work for the two vignettes to compute the total work of the secondary code.

The total-service work for the primary and secondary vignettes and the total-service work for the secondary codes we studied in phase III that can be considered multiple procedures are shown in Appendix Table E.1.

Table E.2 Measuring the Total-Service Work of Bilateral Procedures

During phase III, we studied a number of services that are typically provided as bilateral procedures. An example of a bilateral procedure is a blepharoplasty; right and left lower eyelids (15820-50). The primary procedure for this code is a blepharoplasty; single lower eyelid.

The total-service work for the primary and secondary vignettes and the total-service work for the bilateral procedures we studied in phase III are shown in Appendix Table E.2.

Appendix Table E.1

Estimation of total-service work for secondary codes: Phase III results

CPT	Description	Specialty	Total work
Secondary Code:			
11201	Excision (including simple closure or ligature strangulation), skin tags, multiple fibrocutaneous tags, any area; each additional 10 lesions.	dm	15
Primary Vignette:			
	Excision (including simple closure or ligature strangulation), skin tags, multiple fibrocutaneous tags, any area; 15 lesions.		93
Secondary Vignette:			
	Excision (including simple closure or ligature strangulation), skin tags, multiple fibrocutaneous tags, any area; 25 lesions.		108
		Difference =	15
Secondary Code:			
17001	Destruction by any method, including laser, with or without sugical curettement, all benign facial lesions or premalignant lesions in any location, or benign lesions other than cutaneous vascular proliferative lesions, including local anesthesia; second and third lesions, each.	dm	5
Primary Vignette:			
	Cryodestruction of a 0.5-centimeter benign lesion on the face or actinic keratosis in any location.		52
Secondary Vignette:			
	Cryodestruction of two 0.5-centimeter benign lesions on the face or two actinic keratoses in any location.		57
		Difference =	5

Appendix Table E.1 (continued)

Estimation of total-service work for secondary codes: Phase III results

CPT	Description	Specialty	Total work
Secondary Code:			
17002	Destruction by any method, including laser, with or without sugical curettement, all benign facial lesions or premalignant lesions in any location, or benign lesions other than cutaneous vascular proliferative lesions, including local anesthesia; over three lesions, each additional lesion.	dm	5
Primary Vignette:			
	Cryodestruction of two 0.5-centimeter benign lesions on the face or two actinic keratoses in any location.		57
Secondary Vignette:			
	Cryodestruction of five 0.5-centimeter benign lesions on the face or five actinic keratoses in any location.	Difference =	71 14/3 = 5
Secondary Code:			
17100	Destruction by any method, including laser, of benign skin lesions other than cutaneous vascular proliferative lesions, including local anesthesia; one lesion.	dm	8
Primary Vignette:			
	Cryodestruction of one verruca on the hand.		42
Secondary Vignette:			
	Cryodestruction of two verruca on the hands.	Difference =	50 8

Appendix Table E.1 (continued)

Estimation of total-service work for secondary codes: Phase III results

CPT	Description	Specialty	Total work
Secondary Code:			
17102	Destruction by any method, including laser, of benign skin lesions other than cutaneous vascular proliferative lesions, including local anesthesia; over two lesions, each additional lesion up to 15 lesions.	dm	3
Primary Vignette:			
	Cryodestruction of two verrucae on the hands.		50
Secondary Vignette:			
	Cryodestruction of five verrucae on the hands.		60
		Difference =	10/3 = 3
Secondary Code:			
17201	Electrosurgical destruction of multiple fibrocutaneous tags; each additional 10 lesions	dm	17
Primary Vignette:			
	Electrosurgical destruction of multiple fibrocutaneous tags; 8 lesions.		54
Secondary Vignette:			
	Electrosurgical destruction of multiple fibrocutaneous tags; 18 lesions.		71
		Difference =	17

Appendix Table E.1 (continued)

Estimation of total-service work for secondary codes: Phase III results

CPT	Description	Specialty	Total work
Secondary Code:			
22230	Osteotomy of spine for correction of deformity, each additional segment.	or	619
Primary Vignette:			
	Osteotomy of spine, posterior approach, for correction of deformity, single segment; cervical.		1985
Secondary Vignette:			
	Osteotomy of spine for correction of deformity, two segments.		2604
		Difference =	619
Secondary Code:			
22585	Arthrodesis, anterior or anterolateral, each additional interspace.	ns	226
Primary Vignette:			
	Arthrodesis, anterior interbody technique; cervical below C2, with bone graft, single interspace.		1392
Secondary Vignette:			
	Arthrodesis, anterior interbody technique; crvical below C2, with bone graft, two interspaces.		1718
		Difference =	226

Appendix Table E.1 (continued)

Estimation of total-service work for secondary codes: Phase III results

CPT	Description	Specialty	Total work
Secondary Code:			
22650	Arthrodesis, posterior or posterolateral or lateral transverse process technique, each additional interspace.	or	400
Primary Vignette:			
	Arthrodesis, posterior or posterolateral technique, with local bone or bone allograft and/or internal fixation; lumbar.		1976
Secondary Vignette			
	Arthrodesis, posterior or posterolateral technique, with local bone or bone allograft and/or internal fixation; lumbar, two interspaces.		2376
		Difference =	400
Secondary Code:			
26861	Arthrodesis, interphalangeal joint, with or without internal fixation; each addditonal interphalangeal joint.	or	204
Primary Vignette:			
	Arthrodesis, interphalangeal joint, with or without internal fixation.		425
Secondary Vignette:			
	Arthrodesis, interphalangeal joint, with or without internal fixation; two joints.		629
		Difference =	204

Appendix Table E.1 (continued)
Estimation of total-service work for secondary codes: Phase III results

CPT	Description	Specialty	Total work
Secondary Code:			
26863	Arthrodesis,interphalangeal joint, with or without internal fixation; with autograft (includes obtaining graft); each additional joint.	or	97
Primary Vignette:			
	Arthrodesis,interphalangeal joint, with or without internal fixation; with autograft (includes obtaining graft).		718
Secondary Vignette:			
	Arthrodesis,interphalangeal joint, with or without internal fixation; with autograft (includes obtaining graft); two joints.		815
		Difference =	97
Secondary Code:			
63035	Laminotomy (hemilaminectomy), for decompression of nerve root(s), including partial facetectomy, foraminotomy and/or excision of herniated intvertebral disk; each additional interspace, cervical or lumbar.	ns	249
Primary Vignette:			
	Laminotomy (hemilaminectomy), for decompression of nerve root(s), including partial facetectomy, foraminotomy and/or excision of herniated intvertebral disk; one interspace, cervical, unilateral.		1262
Secondary Vignette:			
	Laminotomy (hemilaminectomy), with decompression of nerve root(s), including partial facetectomy, foraminotomy and/or excision of herniated intvertebral disk; two interspaces, cervical, unilateral.		1511
		Difference =	249

Appendix Table E.1 (continued)

Estimation of total-service work for secondary codes: Phase III results

CPT	Description	Specialty	Total work
Secondary Code:			
27692	Transfer or transplant of single tendon (with muscle redirection or rerouting); each additional tendon.	or	87*
Primary Vignette:			
	Transfer or transplant of single tendon (with muscle redirection or rerouting); superficial eg, anterior tibial extensors into midfoot).		756
Secondary Vignette:			
	Transfer or transplant of two tendons (with muscle redirection or rerouting); superficial eg, anterior tibial extensors into midfoot).		861
		Difference =	105
Primary Vignette:			
	Transfer or transplant of single tendon (with muscle redirection or rerouting); anterior tibial or posterior tibial through interosseous space		875
Secondary Vignette:			
	Transfer or transplant of two tendons (with muscle redirection or rerouting); superficial eg, anterior tibial extensors into midfoot).		943
		Difference =	68

* Average for all the comparisons applicable for the secondary code.

Appendix Table E.1 (continued)

Estimation of total-service work for secondary codes: Phase III results

CPT	Description	Specialty	Total work
Secondary Code:			
63048	Laminectomy, facetectomy and foraminotomy (unilateral or bilateral with decompression of spinal cord, caudal equina and/or nerve root(s), (eg, spinal or lateral recess stenosis), single vertebral segment; each additional segment.	ns	329*
Primary Vignette:			
	Laminectomy, facetectomy and foraminotomy (unilateral or bilateral with decompression of spinal cord, caudal equina and/or nerve root(s), (eg, spinal or lateral recess stenosis), single vertebral segment; cervical.		1549
Secondary Vignette:			
	Laminectomy, facetectomy and foraminotomy (unilateral or bilateral with decompression of spinal cord, caudal equina and/or nerve root(s), (eg, spinal or lateral recess stenosis), single vertebral segment; two segments cevical,thoracic or lumbar.		1765
		Difference =	216

* Average for all the comparisons applicable for the secondary code.

Appendix Table E.1 (continued)

Estimation of total-service work for secondary codes: Phase III results

CPT	Description	Specialty	Total work
Secondary Code: 63048 (conitnued)			
Primary Vignette:	Laminectomy, facetectomy and foraminotomy (unilateral or bilateral with decompression of spinal cord, caudal equina and/or nerve root(s), (eg, spinal or lateral recess stenosis), single vertebral segment; thoracic.		1476
Secondary Vignette:	Laminectomy, facetectomy and foraminotomy (unilateral or bilateral with decompression of spinal cord, caudal equina and/or nerve root(s), (eg, spinal or lateral recess stenosis), single vertebral segment; two segments cevical,thoracic or lumbar.	Difference =	1765 289
Primary Vignette:	Laminectomy, including unilateral or bilateral complete facetectomy or foraminotomy for decompression of spinal cord, caudal equina and/or nerve root(s), (eg, spinal or lateral recess stenosis), single segment; lumbar.		1282
Secondary Vignette:	Laminectomy, facetectomy and foraminotomy (unilateral or bilateral with decompression of spinal cord, caudal equina and/or nerve root(s), (eg, spinal or lateral recess stenosis), single vertebral segment; two segments cevical, thoracic or lumbar.	Difference =	1765 483

Appendix Table E.1 (continued)

Estimation of total-service work for secondary codes: Phase III results

CPT	Description	Specialty	Total work
Secondary Code:			
63057	Transpedicular approach with decompression of spinal cord, equinia and/or nerve root(s) (eg, herniated intervertebral disk); each additional segment, thoracic or lumbar.	ns	583
Primary Vignette:			
	Transpedicular approach with decompression of spinal cord, equinia and/or nerve root(s) (eg, herniated intervertebral disk), single segment, lumbar.		1831
Secondary Vignette:			
	Transpedicular approach with decompression of spinal cord, equinia and/or nerve root(s) (eg, herniated intervertebral disk), two segments, lumbar.		2414
		Difference =	583
Secondary Code:			
63066	Costovertebral approach with decompression of spinal cord or nerve root(s), (eg, herniated invertebral disk), thoracic; each additional segment.	ns	280
Primary Vignette:			
	Costovertebral approach with decompression of spinal cord or nerve root(s), (eg, herniated invertebral disk), thoracic; single segment.		2021
Secondary Vignette:			
	Costovertebral approach with decompression of spinal cord or nerve root(s), (eg, herniated invertebral disk), thoracic; two segments.		2301
		Difference =	280

Appendix Table E.1 (continued)

Estimation of total-service work for secondary codes: Phase III results

CPT	Description	Specialty	Total work
Secondary Code:			
63076	Diskectomy, anterior, for decompression of spinal cord and/or nerve root(s), including osteophytectomy; cervical, each additional interspace.	ns	484
Primary Vignette:			
	Anterior cervical diskectomy, for decompression of spinal cord and nerve root(s), including osteophytectomy; cervical, single interspace.		1362
Secondary Vignette:			
	Diskectomy, anterior, for decompression of spinal cord and/or nerve root(s), including osteophytectomy; cervical, two interspaces.		1846
		Difference =	484
Secondary Code:			
63078	Diskectomy, anterior, for decompression of spinal cord and/or nerve root(s), including osteophytectomy; thoracic, each additional interspace.	ns	352
Primary Vignette:			
	Diskectomy, anterior, for decompression of spinal cord and/or nerve root(s), including osteophytectomy; thoracic, single interspace.		2113
Secondary Vignette:			
	Diskectomy, anterior, for decompression of spinal cord and/or nerve root(s), including osteophytectomy; thoracic, two interspaces.		2465
		Difference =	352

Appendix Table E.1 (continued)

Estimation of total-service work for secondary codes: Phase III results

CPT	Description	Specialty	Total work
Secondary Code:			
63082	Vertebral corpectomy (vertebral body resection), partial or complete, anterior approach with decompression of spinal cord and/or nerve root(s); cervical, each additional segment.	ns	345
Primary Vignette:			
	Vertebral corpectomy (vertebral body resection), partial or complete, anterior approach with decompression of spinal cord and/or nerve root(s); cervical, single segment.		2200
Secondary Vignette:			
	Vertebral corpectomy (vertebral body resection), partial or complete, anterior approach with decompression of spinal cord and/or nerve root(s); cervical, two segments.		2545
		Difference =	345

Appendix Table E.1 (continued)

Estimation of total-service work for secondary codes: Phase III results

CPT	Description	Specialty	Total work
Secondary Code:			
63086	Vertebral corpectomy (vertebral body resection), partial or complete, transthoracic approach with decompression of spinal cord and/or nerve root(s); thoracic, each additional segment.	ns	314
Primary Vignette:			
	Vertebral corpectomy (vertebral body resection), partial or complete, transthoracic approach with decompression of spinal cord and/or nerve root(s); thoracic, single segment.		2661
Secondary Vignette:			
	Vertebral corpectomy (vertebral body resection), partial or complete, transthoracic approach with decompression of spinal cord and/or nerve root(s); thoracic, two segments.		2975
		Difference =	314

Appendix Table E.1 (continued)

Estimation of total-service work for secondary codes: Phase III results

CPT	Description	Specialty	Total work
Secondary Code:			
63088	Vertebral corpectomy (vertebral body resection), partial or complete, combined thoracolumbar approach with decompression of spinal cord, caudal equina or nerve root(s), lower thoracic or lumbar; each additional segment.	ns	445
Primary Vignette:			
	Vertebral corpectomy (vertebral body resection), partial or complete, combined thoracolumbar approach with decompression of spinal cord, caudal equina or nerve root(s), lower thoracic or lumbar; single segment.		2771
Secondary Vignette:			
	Vertebral corpectomy (vertebral body resection), partial or complete, combined thoracolumbar approach with decompression of spinal cord, caudal equina or nerve root(s), lower thoracic or lumbar; two segments.		3216
		Difference =	445

Appendix Table E.1 (continued)

Estimation of total-service work for secondary codes: Phase III results

CPT	Description	Specialty	Total work
Secondary Code:			
63091	Vertebral corpectomy (vertebral body resection), partial or complete, transperitoneal or retroperitoneal approach with decompression of spinal cord, caudal equina or nerve root(s), lower thoracic, lumbar, or sacral; each additional segment.	ns	332
Primary Vignette:			
	Vertebral corpectomy (vertebral body resection), partial or complete, transperitoneal or retroperitoneal approach with decompression of spinal cord, caudal equina or nerve root(s), lower thoracic, lumbar, or sacral; single segment.		2635
Secondary Vignette:			
	Vertebral corpectomy (vertebral body resection), partial or complete, transperitoneal or retroperitoneal approach with decompression of spinal cord, caudal equina or nerve root(s), lower thoracic, lumbar, or sacral; two segments.	Difference =	2967 332

Appendix Table E.1 (continued)

Estimation of total-service work for secondary codes: Phase III results

CPT	Description	Specialty	Total work
Secondary Code:			
63308	Vertebral corpectomy (vertebral body resection), partial or complete, for excision of intraspinal lesion, each additional segment.	ns	380
Primary Vignette:			
	Vertebral corpectomy (vertebral body resection), partial or complete, for excision of intraspinal lesion, single segment; extradural, lumbar or sacral by transperitoneal or retroperitoneal approach.		2873
Secondary Vignette:			
	Vertebral corpectomy (vertebral body resection), partial or complete, for excision of intraspinal lesion, two segments; extradural, lumbar or sacral by transperitoneal or retroperitoneal approach.		3253
		Difference =	380
Secondary Code:			
64623	Destruction by neurolytic agent; paravertebral facet joint nerve, lumbar, each additional level.	ns	69
Primary Vignette:			
	Destruction by neurolytic agent; paravertebral facet joint nerve, lumbar, single level.		335
Secondary Vignette:			
	Destruction by neurolytic agent; paravertebral facet joint nerve, lumbar, two levels.		404
		Difference =	69

Appendix Table E.1 (continued)

Estimation of total-service work for secondary codes: Phase III results

CPT	Description	Specialty	Total work
Secondary Code:			
64778	Excision of neuroma, digital nerve each additional digit.	ns	67
Primary Vignette:			
	Excision of neuroma, digital nerve, one or both same digit.		458
Secondary Vignette:			
	Excision of neuroma, digital nerve two digits.		525
		Difference =	67
Secondary Code:			
64783	Excision of neuroma, hand or foot, each additional nerve, except same digit.	ns	67
Primary Vignette:			
	Excision of neuroma, hand or foot, except digital nerve.		559
Secondary Vignette:			
	Excision of neuroma, hand or foot, two nerves, more than one digit.		626
		Difference =	67

Appendix Table E.1 (continued)

Estimation of total-service work for secondary codes: Phase III results

CPT	Description	Specialty	Total work
Secondary Code:			
64832	Suture of digital nerve, hand or foot; each additional digital nerve.	ns	220
Primary Vignette:			
	Suture repair of digital nerve, hand or foot; one nerve.		750
Secondary Vignette:			
	Suture repair of digital nerve, hand or foot; two nerves.		970
		Difference =	220
Secondary Code:			
64859	Suture of each additional major peripheral nerve.	ns	453
Primary Vignette:			
	Suture repair of major peripheral nerve, arm or leg, except sciatic, including transposition.		1237
Secondary Vignette:			
	Suture repair of two major peripheral nerves, arm or leg, except sciatic, including transposition.		1690
		Difference =	453

Appendix Table E.1 (continued)
Estimation of total-service work for secondary codes: Phase III results

CPT	Description	Specialty	Total work
Secondary Code:			
64901	Nerve graft, each additional nerve, single strand.	ns	379*
Primary Vignette:			
	Nerve graft, (includes obtaining graft), single strand, hand or foot, up to 4 cm. length.		1409
Secondary Vignette:			
	Nerve graft, two nerves, single strand.		1875
		Difference =	466
Primary Vignette:			
	Nerve graft (includes obtaining graft), single strand, hand or foot; more than 4 cm length.		1545
Secondary Vignette:			
	Nerve graft, two nerves, single strand.		1875
		Difference =	330
Primary Vignette:			
	Nerve graft (includes obtaining graft), single strand, arm or leg; up to 4 cm length.		1439
Secondary Vignette:			
	Nerve graft, two nerves, single strand.		1875
		Difference =	436
Primary Vignette:			
	Nerve graft (includes obtaining graft), single strand, arm or leg; more than 4 cm length.		1591
Secondary Vignette:			
	Nerve graft, two nerves, single strand.		1875
		Difference =	284

* Average for all the comparisons applicable for the secondary code.

Appendix Table E.1 (continued)
Estimation of total-service work for secondary codes: Phase III results

CPT	Description	Specialty	Total work
Secondary Code:			
64902	Nerve strand, each additional nerve, multiple strands (cable).	ns	303*
Primary Vignette:			
	Nerve graft, (includes obtaining graft), multiple strands (cable), hand or foot, up to 4 cm length.		1747
Secondary Vignette:			
	Nerve graft, two nerves, multiple strands (cable).		2131
		Difference =	384
Primary Vignette:			
	Nerve graft (includes obtaining graft), multiple strands (cable), hand or foot; more than 4 cm length.		1871
Secondary Vignette:			
	Nerve graft, two nerves, multiple strands (cable).		2131
		Difference =	260
Primary Vignette:			
	Nerve graft (includes obtaining graft), multiple strands (cable), arm or leg; up to 4 cm length.		1787
Secondary Vignette:			
	Nerve graft, two nerves, multiple strands (cable).		2131
		Difference =	344
Primary Vignette:			
	Nerve graft (includes obtaining graft), multiple strands (cable), arm or leg; more than 4 cm length.		1907
Secondary Vignette:			
	Nerve graft, two nerves, multiple strands (cable).		2131
		Difference =	224

* Average for all the comparisons applicable for the secondary code.

Appendix Table E.1 (continued)

Estimation of total-service work for secondary codes: Phase III results

CPT	Description	Specialty	Total work
Secondary Code:			
92984	Percutaneous transluminal coronary angioplasty; each additional vessel.	ca	202
Primary Vignette:			
	Elective PTCA (percutaneous transluminal coronary angioplasty), single vessel, for angina pectoris.		769
Secondary Vignette:			
	Elective PTCA (percutaneous transluminal coronary angioplasty), two vessels.		971
		Difference =	202

Appendix Table E.2
Estimation of total-service work for bilateral services: Phase III results

CPT	Description	Specialty		Total work
Bilateral Service:				
15820	Blepharoplasty, second lower eyelid	ps		156
Primary Vignette:				
	Blepharoplasty, single lower eyelid		498	
Secondary Vignette:				
	Blepharoplasty, single both lower eyelids		654	
		Difference =	156	
Bilateral Service:				
15821	Blepharoplasty, second lower eyelid with extensive herniated fat pad	ps		176
Primary Vignette:				
	Blepharoplasty, single lower eyelid with extensive herniated fat pad		556	
Secondary Vignette:				
	Blepharoplasty, single both lower eyelids with extensive herniated fat pad		732	
		Difference =	176	
Bilateral Service:				
15822	Blepharoplasty, second upper eyelid	ps		167
Primary Vignette:				
	Blepharoplasty, single upper eyelid		446	
Secondary Vignette:				
	Blepharoplasty, single both lower eyelids		613	
		Difference =	167	

Appendix Table E.2 (continued)

Estimation of total-service work for secondary codes: Phase III results

CPT	Description	Specialty	Total work
Bilateral Service:			
19328	Removal of intact mammary implant second breast	ps	182
Primary Vignette:			
	Removal of intact mammary implant, single breast		513
Secondary Vignette:			
	Removal of intact mammary implant two breasts		695
		Difference =	182
Bilateral Service:			
19330	Removal of mammary implant material second breast	ps	217
Primary Vignette:			
	Removal of mammary implant material, single breast		695
Secondary Vignette:			
	Removal of mammary implant material, two breasts		912
		Difference =	217

Appendix E, Table E.3

Survey Estimates of Pre, Immediate Pre-and Post-Op and Later Same Day Post Time
General Surgery -- Multiple Procedures

Primary Cpt	Secondary Cpt	Svc	Description	Pre-Service Time Before O.R Entry: Time (mins) Mean	Pre-Service Time Before O.R Entry: S.E*	Immediate Pre- and Post-Op Time: Time (mins) Mean	Immediate Pre- and Post-Op Time: S.E*	Immediate Pre- and Post-Op Time: No.of Responses	Later Same Day Post Visits: Number of Visits	Later Same Day Post Visits: S.E*	Later Same Day Post Visits: No. of Responses
49500	49500	b	Bilat inguinal hernia rpr child	24	2.6%	38	1.2%	24	0.8	13.5%	24
49500	54152	d	Hernia rpr for child w circumcision	25	3.6	39	1.4	24	0.9	13.1	24
38745	19120	g	Excis breast mass w axillary dissection	42	2.5	63	2.7	25	1.2	13.2	25
19240	19120	i	Excis breast mass w mod rad mastectomy	42	2.8	61	2.5	25	1.2	14.0	25
44140	44005	o	Ptl colctmy w extensive lysis of adhesns	38	3.3	60	1.0	24	1.2	5.6	24
44140	47100	p	Ptl colctmy w wedge liver bx	37	3.2	61	2.0	24	1.1	5.7	24
47120	44140	q	Ptl colctmy w resection liver	53	2.1	74	2.4	24	1.7	3.2	24
44140	44950	r	Ptl colctmy w appendectomy.	37	3.5	60	2.0	24	1.1	5.6	24
44800	44950	t	Appendctmy w excis Meckel's divrticulum	33	2.0	51	1.3	24	1.0	0.0	24
47605	49560	w	Cholecyst w rpr ventral hernia	32	3.4	51	1.9	24	1.0	2.4	24
43324	43830	z	Nissen fundoplication w temp gastrostomy	42	2.0	67	1.1	24	1.0	3.0	24
43635	38100	ac	Hemigstrctmy w vagot w total splenectomy	44	3.2%	68	1.3%	24	1.6	2.7	24
38100	49000	ae	Expl lap, trauma w tot splen	41	6.9	62	3.7	24	1.4	7.8	24
svcae	44140	af	Expl lap, trauma w tot splen w pt colctm	45	6.6	67	4.0	24	1.6	7.5	24

* Standard error is reported as a percent of the mean.

Appendix E, Table E.3 (continued)

Survey Estimates of Pre, Immediate Pre-and Post-Op and Later Same Day Post Time
Podiatry -- Multiple Procedures

Primary Cpt	Secondary Cpt	Svc	Description	Pre-Service Time Before O.R Entry Time (mins) Mean	Pre-Service Time Before O.R Entry Time (mins) S.E	Immediate Pre-Op Time Time (mins) Mean	Immediate Pre-Op Time Time (mins) S.E	Same Day Post-op Time Time (mins) Mean	Same Day Post-op Time Time (mins) S.E	No.of Responses
28270[a]			Capsul metars jnt fr contrctr, sngl jnt	19	12.1%	22	9.4%	19	11.6%	22
28270	28270	b	Capsul metars jnt fr contrctr, two jnt	19	12.3	24	10.0	20	11.2	22
11750[a]			Excis nl & nl mtrx, part/comp, sngl nail	15	14.1	18	11.2	16	10.4	22
11750	11750	d	Excis nl & nl mtrx, part/comp, two nail	15	14.3	21	12.1	17	7.5	22
11750	11750[x10]	e	Excis nl & nl mtrx, part/comp, ten nails	18	16.0	30	10.2	22	9.6	22
28285[a]			Hammertoe oper on one toe	21	11.1	24	8.5	21	10.5	22
28285	28285	g	Hammertoe oper on two toes, same ft	21	11.4	27	8.5	22	10.2	22
28285	28285	h	Hammertoe oper on two toes, one each ft	21	11.6	31	7.6	23	10.0	22
28285	11750	i	Hammertoe oper on one toe and excis nl	22	11.1	28	6.8	23	9.8	21
28285	28270	j	Hammertoe oper one toe and sngl capsltmy	22	10.6	26	7.9	22	10.8	22
29292[a]			Bunionectomy	27	8.5	27	7.9	23	10.6	22
29292	29292	l	Bilateral bunionectomy	27	8.6	32	8.2	26	10.1	22
29292	28285	m	Bunionectomy, sngl and hammertoe, one toe	27	8.7	31	8.2	25	10.9	22
28140[a]			Partial metatarsectomy	23	9.3	24	8.3	20	11.8	20
28160[a]			Hemiphalangectomy, single toe	21	10.3	24	7.6	21	10.8	22
28160	28160	p	Hemiphalangectomy, two toes	22	11.3	26	7.6	22	11.6	22
28080[a]			Excis single interdig Morton's neuroma	21	9.6	24	8.5	22	10.0	22
28080	28080	r	Excis bilat interdig Morton's neuroma	21	9.7	30	7.4	24	9.4	22
28080[x2]	28140	s	Excis bilat neurma and prtl metatrsctomy	25	9.2	32	8.8	26	10.4	20
28080	28160	t	Excis sngl nrma & hemiphlngctomy, sngl toe	23	8.5	29	7.7	24	9.0	22
28285	28080	u	Hmrtoe oper 1 toe and excis of sngl nrma	24	8.5	29	7.6	24	8.7	22
11422[a]			Excis sngl ben les (incl simple closure)	12	21.5	17	11.6	13	18.3	21
11422	11422	w	Excis two ben les (incl simple closure)	12	21.8	19	11.4	14	18.4	21

[a]These services are not multiple procedures, but are individual procedures that are part of a multiple. These services are included to compute the additional work and time of the multiple service. Please note this distinction for Tables E.4 through E.7 for this specialty.

Appendix E, Table E.3 (continued)
Survey Estimates of Pre, Immediate Pre-and Post-Op and Later Same Day Post Time
Oral and Maxillofacial Surgery -- Multiple Procedures

Primary Cpt	Secondary Cpt	Svc	Description	Pre-Service Time Before O.R Entry Time (mins) Mean	S.E*	Immediate Pre- and Post-Op Time Time (mins) Mean	S.E*	No.of Responses	Later Same Day Post Visits Number of Visits	S.E*	No. of Responses
21422[a]		b	Tx pal, max fx, Lefort I	39	5.7%	66	5.5%	21	1.0	0.0%	21
21470	21422	c	Tx mandib fx & tx pal, max fx, Lefort I	55	9.7	78	4.5	21	1.0	3.4	21
21240	21240	e	Bilat TMJ arthroplasty	35	4.6	70	2.8	21	1.0	0.0	21
21060[a]		f	TMJ meniscectomy	33	3.5	60	5.0	20	1.0	0.0	20
21422	21060	g	Unil TMJ arthroplasty w TMJ meniscectomy	35	5.8	70	4.5	20	1.0	0.0	20
21147	21121	j	Lefort I osteotomy w genioplasty	61	10.1	77	3.6	21	1.0	3.4	21
21360[a]		k	Tx malar fx	35	5.6	58	6.6	21	1.0	0.0	21
21390[a]		l	Tx orbital floor blowout fx	40	6.7	60	6.0	21	1.0	3.4	21
21360	21390	m	Tx malar fx & tx orbital floor blowout fx	44	8.1	66	6.2	21	1.0	3.4	21
21247[a]		n	Reconstruct mandib condyle	48	7.4	70	2.6	19	1.0	3.7	19
21255[a]		o	Reconstruct zygom arch	52	9.6	73	3.7	18	1.0	3.9	18
21247	21255	p	Reconstruct mandib condyle & zygom arch	61	11.3	82	6.5	18	1.0	2.3	18
D7240[a]		q	Remov single impact wisdom teeth (full	12	34.6	21	16.7	20	0.6	16.7	20
D7240	D7240	r	Remov 2 impact wisdom teeth (full bony)	13	34.9	22	16.4	20	0.6	16.5	20
svc_r	D7240	s	Remov 4 impact wisdom teeth (full bony)	16	27.6	23	17.6	20	0.7	16.2	20
D7110[a]		t	Extract single erupted mandibular tooth	9	32.0	14	14.1	19	0.4	17.2	19
D7110	D7110	u	Extract 2 erupted mandibular teeth	10	32.4	15	14.3	19	0.4	17.2	19
svc_u	D7110	v	Extract 4 erupted mandibular teeth	11	33.0	16	14.5	19	0.4	17.2	19
21193[a]		w	Unilat recnstr mnd ram, C/L ost wo bon gft	48	10.3	60	6.2	21	1.0	0.0	21
21193	21193	x	Bilat recnstr mnd ram, C/L ost wo bon gft	51	9.7	62	7.0	21	1.0	0.0	21
21194[a]		y	Unilat recnstr mnd ram, C/L ost w bon gft	55	9.5	65	7.2	21	1.0	0.0	21
21194	21194	z	Bilat recnstr mnd ram, C/L ost w bon grft	58	9.7	70	7.2	21	1.0	3.4	21
21195[a]		aa	Unilat rcnstr mnd ram, sag spl wo int fix	50	10.2	61	8.3	21	1.0	0.0	21
21195	21195	ab	Bilat recnstr mnd ram, sag spl wo int fix	53	9.9	62	7.8	21	1.0	0.0	21
21196[a]		ac	Unilat rcnstr mnd ram, sag spl w int fix	52	10.2	60	8.8	21	1.0	0.0	21
21196	21196	ad	Bilat recnstr mnd ram, sag spl w int fix	57	9.7	65	8.5	21	1.0	0.0	21
21198[a]		ae	Unilat osteotomy, mandib, segmental	47	13.2	55	9.7	19	1.0	0.0	19
21198	21198	af	Bilat osteotomy, mandib, segmental	49	13.0	58	9.7	19	1.0	0.0	19
21206[a]		ag	Unilat osteotomy, maxilla, segmental	45	15.3	57	6.6	16	0.9	7.5	16
21206	21206	ah	Bilat osteotomy, maxilla, segmental	46	13.4	60	7.5	19	1.0	0.0	19

[a]These services are not multiple procedures, but are individual procedures that are part of a multiple. These services are included to compute the additional work and time of the multiple service. Please note this distinction for Tables E.4 through E.7 for this specialty.

Appendix E, Table E.3 (continued)

Survey Estimates of Pre, Immediate Pre-and Post-Op and Later Same Day Post Time
Neurosurgery -- Multiple Procedures

Primary Cpt	Secondary Cpt	Svc	Description	Pre-Service Time Before O.R Entry Time (mins) Mean	S.E	Immediate Pre- and Post-Op Time Time (mins) Mean	S.E	No.of Responses	Later Same Day Post Visits Number of Visits	S.E	No. of Responses
63075	22554	c	Anter cerv diskectomy w arthrodesis	35	3.2%	52	2.1%	14	1.0	0.0%	14
22554	20661	e	Arthrodesis w appl cranial halo	39	5.6	64	6.6	14	1.1	5.1	14
22625	63047	h	Lumbar lamin w arthrodesis	39	3.8	58	3.7	14	1.0	0.0	14
svc_h	22842	i	Lumbar lamin w arthrodesis w instrmntion	44	6.8	64	6.9	14	1.1	5.1	14
61518	62180	j	Post fossa craniectomy w ventriculocistrn	53	2.3	83	2.0	15	1.6	2.6	15
61512	61512	n	Craniotomy, bilat or mult, supratent meng	51	2.6	73	3.3	15	1.2	7.9	15
61700	61700	p	Craniotomy, bilat or mult, clip aneurysm	61	2.2	80	2.9	15	1.7	3.7	15
61700	61711	r	Craniotomy, clip aneurysm w ECIC	64	3.4	82	3.8	15	2.0	18.5	15
svc_r	61340	t	Crantmy, clip anrysm w ECIC w subtem dcm	64	3.6	86	3.6	15	2.1	5.2	15
61518	61711	u	Post fossa craniectomy w ECIC	63	4.3	87	2.4	14	1.8	4.0	14
61500	62141	x	Craniectomy w excis tumor w cranioplasty	36	2.7	60	1.1	15	1.0	0.0	15
64719	64721	aa	Carpal tunnel rpr w ulnar nerve decomprss	25	4.7	35	3.5	13	0.7	10.5	13
63706	62223	ad	Rpr myelomeningocele w creation V-P shunt	46	4.2	62	2.4	13	1.1	6.1	13
63030	62284	ag	Myelogram foll by lumbar laminectomy	42	9.0	57	4.6	14	1.0	0.0	14
		ah	Mult trauma pt, neck fx, decmpr spn, fuse	48	54.9	85	21.7	13	1.5	9.9	13

Appendix E, Table E.3 (continued)

Survey Estimates of Pre, Immediate Pre-and Post-Op and Later Same Day Post Time
Obstetrics and Gynecology -- Multiple Procedures

Primary Cpt	Secondary Cpt	Svc	Description	Pre-Service Time Before O.R Entry Time (mins) Mean	S.E*	Immediate Pre- and Post-Op Time Time (mins) Mean	S.E*	No.of Responses	Later Same Day Post Visits Number of Visits	S.E*	No. of Responses
56300	58120	d	D&C w diagnostic laparoscopy	27	5.7%	32	4.4%	15	0.9	7.7%	15
56350	58120	e	D&C w diagnostic hysteroscopy	26	5.1	31	3.6	15	0.9	7.7	15
58150	57240	h	Abdom hystrctmy w anter colporrhaphy	38	2.7	48	3.0	15	1.0	4.7	15
58150	57270	k	Abdom hystrctmy w rpr enterocele	37	2.8	45	0.9	14	1.1	5.1	14
58150	57260	l	Abdom hystrctmy w comb anter colporrhaphy	38	2.7	49	3.1	15	1.0	4.7	15
58260	57260	n	Vag hystrctmy w comb anter colporrhaphy	33	2.8	44	1.3	15	1.0	4.7	15
57280	57260	p	Comb anter colporrhaphy w abd colpopexy	38	2.1	51	3.1	12	1.1	5.9	12
56303	56304	s	Surg laparscpy w fulgrtn w lysis adhesns	23	4.6	33	3.5	13	0.9	8.8	13
58760	56300	u	Diagnostic laparoscopy w fimbrioplasty	35	2.8	47	1.3	15	1.0	0.0	15
58140	58740	x	Myomectomy, sngl/mult w lysis adhesns	34	2.6	42	2.3	14	1.0	0.0	14
57282	57210	aa	Sacrosp lig fixtn, vag w colpoprnrrhphy	31	3.2	42	2.2	12	1.0	0.0	12
svcaa	57240	ab	Ant colporrhaphy w sacrosp lig fixtn, vag	33	4.1	43	2.4	12	1.0	0.0	12

Appendix E, Table E.3 (continued)

Survey Estimates of Pre, Immediate Pre-and Post-Op and Later Same Day Post Time
Ophthalmology -- Multiple Procedures

Primary Cpt	Secondary Cpt	Svc	Description	Pre-Service Time Before O.R Entry Time (mins) Mean	S.E	Immediate Pre- and Post-Op Time Time (mins) Mean	S.E	No.of Responses	Later Same Day Post Visits Number of Visits	S.E	No. of Responses
65730	66984	c	Corneal trnsplnt w cataract remov & IOL	32	5.5%	42	2.5%	17	1.1	5.7%	17
65730	66170	e	Corneal trnsplnt w trabeculectomy	31	5.4	43	2.9	16	1.1	6.1	16
65755	66985	i	Corneal trnsplnt w secondary IOL	31	5.2	42	1.9	17	1.1	5.7	17
65755	67010	j	Corneal trnsplnt w anter vitrectomy	29	5.0	41	1.5	17	1.1	5.7	17
66985	67010	k	Anter vitrectomy w secondary IOL	29	5.4	39	2.0	18	0.9	8.0	18
svc_j	66985	l	Cornl trnspl w antr vitrctmy w scndry IO	33	5.9	43	3.1	17	1.1	5.7	17
66170	66984	n	Cataract remov & IOL w trabeculectomy	30	4.6	39	3.0	16	0.7	11.5	16
67036	66984	o	Cataract remov & IOL w vitrectomy	30	4.8	39	3.2	18	0.7	10.6	18
66984	67311	q	Strabismus srg w cataract remov & IOL	29	4.1	36	2.1	16	0.6	8.1	16
67107	65280	u	Rpr corn lacer w rpr reatt by sclr bk	35	4.1	44	2.8	16	1.1	6.1	16
svc_u	66840	v	Rpr corn lac w rpr reat, scl bk w cat xt	37	5.1	44	3.1	16	1.1	6.1	16
66180	66170	y	1st stg glauc drn impl w trabeculectomy	32	3.6	41	1.6	10	1.1	7.2	10
svc_y	67255	z	1st stg glauc drn impl w trab w scl rein	38	14.6	42	2.5	10	1.1	7.2	10
15820	15822	ac	Blepharoplasty, right lowr & uppr eyelids	22	5.1	21	4.6	16	0.5	6.1	16
15822	15822	ad	Bilat blepharoplasty, upper eyelids	22	5.1	21	4.6	16	0.5	6.1	16
67107	66761	af	Irid by las srg w rpr ret reatt, sclr bk	32	3.7	42	1.5	15	1.3	29.0	15
68700	67935	ai	Suture wound, eyelid w plast rpr canlcli	22	4.5	32	2.4	18	0.5	5.4	18

Appendix E, Table E.3 (continued)

Survey Estimates of Pre, Immediate Pre-and Post-Op and Later Same Day Post Time
Orthopedic Surgery -- Multiple Procedures

Primary Cpt	Secondary Cpt	Svc	Description	Pre-Service Time Before O.R Entry: Time (mins) Mean	S.E*	Immediate Pre- and Post-Op Time: Time (mins) Mean	S.E*	No.of Responses	Later Same Day Post Visits: Number of Visits	S.E*	No. of Responses
28292	28292	b	Bilat bunionectomy, K/M/M	30	4.5%	56	4.0%	13	0.8	12.9%	13
28292	28285	d	Bunionectomy, K/M/M w hammertoe, one toe	29	3.7	52	3.4	13	0.8	12.9	13
29888	29881	g	Arthr meniscectomy w ACL reconstruction	30	4.7	53	3.4	12	1.0	0.0	12
27447	27447	i	Bilat tot knee replacement	36	5.1	72	4.4	12	1.0	0.0	12
25605	25605	k	ORIF bilat Colles'fracture	29	6.3	45	5.2	13	0.9	8.8	13
64721	64721	m	Bilat carpal tunnel rpr	26	4.4	52	4.6	13	0.7	10.5	13
64721	26055	o	Carpal tunnel rpr w tndn shth incis fngr	25	4.2	47	4.3	13	0.7	10.5	13
27506	27506	q	ORIF R & L femoral shaft fractures	43	5.9	80	7.2	12	1.1	5.9	12
27506	27814	t	ORIF femoral shaft fx & bimall ankle fx	38	5.5	75	6.0	12	1.0	0.0	12
svc_q	24515	u	ORIF R & L fem shaft fxs & humer shaft f	50	8.0	98	12.4	12	1.1	5.9	12
		x	Open tx crushed pelvis w fem neck fx	42	3.3	65	5.2	10	1.1	9.7	10
25260	25260	z	Rpr 5 lacr flxr tendns wrist	34	4.6	44	4.5	9	1.0	0.0	9
svc_z	64856	ab	Rpr 5 lacr flx tendns wrst w rpr medn nrv	38	4.5	58	2.4	9	1.0	0.0	9
64831	26350	ae	Rpr lacr flxr tendn finger w rpr digt nrv	30	4.5	49	3.5	9	1.0	0.0	9
svcae	26735	ag	Rpr flx tndn fngr w rpr dig nrv w ORIF f	34	6.5	52	4.8	9	1.0	0.0	9
		ai	Rad res neopl hip w tot hip repl w allog	47	8.3	69	4.5	10	1.1	7.2	10

Appendix E, Table E.3 (continued)

Survey Estimates of Pre, Immediate Pre-and Post-Op and Later Same Day Post Time
Otolaryngology -- Multiple Procedures

Primary Cpt	Secondary Cpt	Svc	Description	Pre-Service Time Before O.R Entry Time (mins) Mean	S.E*	Immediate Pre- and Post-Op Time Time (mins) Mean	S.E*	No.of Responses	Later Same Day Post Visits Number of Visits	S.E*	No. of Responses
30520	30140	c	Septoplasty w submuc resect turbinate	25	6.0%	41	1.8%	10	1.0	0.0%	10
69436	69436	e	Bilat tympanostomy	16	7.2	15	1.8	10	0.6	9.7	10
42820	69436	g	T & A w bilat tympanostomy	23	6.9	31	1.8	10	0.7	12.2	10
31600	31525	j	Plan trach w diag larngscpy	27	8.1	33	5.6	10	1.1	7.2	10
svc_j	31622	l	Plan trach w diag larngscpy w diag bronc	27	8.1	34	5.6	10	1.1	7.2	10
31622	31525	m	Diag larngscpy w diag bronch	21	11.0	25	13.7	10	0.7	17.1	10
31360	38724	p	Tot laryngctmy w modif radic neck dissect	41	3.6	66	2.3	10	1.6	4.5	10
svc_j	31395	r	Plan trach w diag laryng w pharnglrngctm	43	5.4	75	2.5	9	1.7	4.9	9
svc_r	15755	t	Pln trch w diag laryng w pharngl w fla	50	9.7	85	6.4	9	1.9	7.6	9
31200	31020	w	Anter ethmoidectomy w nas antral windows	27	5.4	36	1.8	10	1.0	0.0	10
31200	30115	y	Nas polypctmy w anter ethmoidectomy	26	5.4	36	2.6	10	1.0	0.0	10
41155	31600	aa	Plan trach w glossectomy & rad neck diss	40	4.4	79	2.8	9	1.7	4.9	9
svcaa	15732	ac	Pln trch w glssctmy & rad nck w musc fla	45	8.3	85	5.0	9	1.8	6.5	9
42145	30520	ae	Palatphrngplsty w septoplasty	30	7.2	44	4.4	10	1.0	0.0	10
svcae	30140	af	Palatphrng w septplsty w resect nas turb	30	7.2	45	4.8	10	1.0	0.0	10

Appendix E, Table E.3 (continued)

Survey Estimates of Pre, Immediate Pre-and Post-Op and Later Same Day Post Time
Cardiothoracic Surgery -- Multiple Procedures

Primary Cpt	Secondary Cpt	Svc	Description	Pre-Service Time Before O.R Entry Time (mins) Mean	S.E*	Immediate Pre- and Post-Op Time Time (mins) Mean	S.E*	No.of Responses	Later Same Day Post Visits Number of Visits	S.E*	No. of Responses
33405	33430	c	AVR w a MVR	44	4.3%	93	2.7%	17	2.6	14.6%	17
33405	33512	e	AVR w CABGX3	48	3.4	90	1.7	17	2.5	14.6	17
33430	33512	f	MVR w CABGX3	49	3.7	92	2.6	17	2.3	5.7	17
33512	33425	h	Mitral valve rpr w CABGX3	50	4.0	93	2.9	17	2.3	5.7	17
39400	31622	k	Diagn bronch w mediastinoscopy	30	3.0	44	5.9	17	1.0	4.2	17
32100	31622	m	Diagn bronch w major thoracotomy	37	1.6	66	4.1	17	1.7	3.5	17
32100	39400	n	Mediastinoscopy w major thoracotomy	37	1.6	67	5.2	17	1.7	3.5	17
32480	31622	p	Diagn bronchoscopy w tot lobectomy	35	3.1	68	4.3	17	1.6	3.3	17
32480	39400	q	Mediastinoscopy w tot lobectomy	36	3.4	70	6.3	17	1.7	3.5	17
32440	31622	s	Diagn w tot pneumonectomy	39	2.0	69	4.0	17	1.7	3.7	17
33512	33212	u	CABGX3 w insert/repl pcmkr or AICD	48	3.7	92	5.2	17	2.0	2.4	17
33512	35301	w	Carotid endarterectomy w CABGX3	52	5.0	92	4.4	14	2.2	4.7	14
35556	35355	z	Iliofemoral endartrctmy w fem-pop bypass	41	2.2	72	4.0	11	1.7	4.6	11

Appendix E, Table E.3 (continued)

Survey Estimates of Pre, Immediate Pre-and Post-Op and Later Same Day Post Time
Urology -- Multiple Procedures

Primary Cpt	Secondary Cpt	Svc	Description	Pre-Service Time Before O.R Entry Time (mins) Mean	S.E	Immediate Pre- and Post-Op Time Time (mins) Mean	S.E	No.of Responses	Later Same Day Post Visits Number of Visits	S.E	No. of Responses
54520	54520	b	Simple bilat orchiectomy	22	2.7%	40	2.8%	20	0.7	8.1%	20
52601	svc_b	d	TURP w simple bilat orchiectomy	37	3.4	50	2.9	20	1.0	2.8	20
52601	49505	g	TURP w inguinal hernia rpr, over age 5	39	4.7	51	3.1	19	1.1	4.6	19
52601	52317	h	TURP w simple litholapaxy	36	3.0	48	2.5	20	1.1	4.4	20
54640	54640	j	Bilat orchiopexy	38	2.1	43	2.7	18	0.7	8.8	18
50590	52332	m	Lithotripsy w cystourethroscopy	33	3.4	44	3.7	19	0.7	10.2	19
51596	43830	p	Complete cystectomy w temp gastrostomy	70	1.8	81	5.2	17	1.7	3.5	17
50080	50040	s	Nephrstlthtmy/pyelstlthtmy w nephrostomy	43	3.5	61	4.4	19	1.1	5.1	19
51845	51040	v	Cystostomy w an abdom-vag vesic neck susp	29	3.7	46	1.1	20	1.1	4.9	20
54530	54660	y	Radical orchiectomy w insert test prosth	36	2.7	46	0.8	20	1.0	3.5	20
52000	51726	ab	Cystourethroscopy w complex cystometrogrm	18	5.9	16	10.5	20	.	.	.
51741	51726	af	Complex cystometrgrm w complex uroflwmtry	18	4.9	15	8.9	20	.	.	.
51795	51772	ag	UPP w AP	17	5.7	15	9.3	20	.	.	.
svcag	51726	ah	Complex cystometrogrm w UPP w AP	19	7.9	16	10.7	20	.	.	.
svcaf	51795	ai	Cmplx cystmtrgrm w a cmplx uroflowm w AP	19	7.9	16	10.7	20	.	.	.

Appendix E, Table E.4

Survey Estimates of Post Service Hospital and Office Visits
General Surgery -- Multiple Procedures

Primary Cpt	Secondary Cpt	Svc	Description	Hospital Visits Number of Visits	Hospital Visits S.E*	ICU Visits Number of Visits	ICU Visits S.E*	Office Visits Number of Visits	Office Visits S.E*	No. of Responses
49500	49500	b	Bilat inguinal hernia rpr child	1.2	8.5%	0.0	0.0%	2.1	4.9%	24
49500	54152	d	Hernia rpr for child w circumcision	1.2	8.5	0.0	0.0	2.2	5.5	24
38745	19120	g	Excis breast mass w axillary dissection	4.3	4.2	0.0	0.0	3.7	6.2	25
19240	19120	i	Excis breast mass w mod rad mastectomy	5.4	3.4	0.0	0.0	5.8	2.6	25
44140	44005	o	Ptl colctmy w extensive lysis of adhesns	9.3	3.1	0.5	16.7	4.1	4.4	24
44140	47100	p	Ptl colctmy w wedge liver bx	9.3	3.6	0.4	17.2	4.2	4.5	24
47120	44140	q	Ptl colctmy w resection liver	13.2	2.7	3.4	4.9	5.5	2.9	24
44140	44950	r	Ptl colctmy w appendectomy.	9.1	3.3	0.5	17.1	4.0	4.5	24
44800	44950	t	Appendctmy w excis Meckel's divrticulum	6.7	3.2	0.2	13.0	3.0	1.2	24
47605	49560	w	Cholecyst w rpr ventral hernia	5.4	5.0	0.0	4.9	3.4	4.8	24
43324	43830	z	Nissen fundoplication w temp gastrostomy	8.9	2.3	0.3	13.0	3.9	2.4	24
43635	38100	ac	Hemigstrctmy w vagot w total splenectomy	10.5	1.9%	0.6	17.9	4.4	3.6	24
38100	49000	ae	Expl lap, trauma w tot splen	8.2	5.1	0.9	23.2	3.5	6.8	24
svcae	44140	af	Expl lap, trauma w tot splen w pt colctm	10.4	4.0	1.8	22.3	4.4	5.0	24

* standard error is reported as a percent of the mean.

Appendix E, Table E.4 (continued)

Survey Estimates of Post Service Hospital and Office Visits
Podiatry -- Multiple Procedures

Primary CPT	Secondary CPT	Svc	Description	Hospital Visits: Total Hospital Time	Hospital Visits: SE	Hospital Visits: Visits	Office Visits: Total Office Time	Office Visits: SE	Office Visits: No. of Visits	Office Visits: No. of Responses
28270[a]			Capsul metars jnt fr contrctr, sngl jnt	1.9	28.9%	0.1	44	10.2%	4.1	22
28270	28270	b	Capsul metars jnt fr contrctr, two jnt	1.9	30.2	0.1	48	11.2	4.2	22
11750[a]			Excis nl & nl mtrx, part/comp, sngl nail	1.7	27.7	0.1	43	12.7	4.4	22
11750	11750	d	Excis nl & nl mtrx, part/comp, two nail	1.7	28.3	0.1	50	13.7	4.5	22
11750	11750[x10]	e	Excis nl & nl mtrx, part/comp, ten nails	1.9	35.2	0.1	93	12.7	5.9	22
28285[a]			Hammertoe oper on one toe	1.9	30.0	0.1	65	10.0	5.3	22
28285	28285	g	Hammertoe oper on two toes, same ft	2.0	31.8	0.1	72	10.6	5.4	22
28285	28285	h	Hammertoe oper on two toes, one each ft	2.0	31.8	0.1	82	10.8	5.4	22
28285	11750	i	Hammertoe oper on one toe and excis nl	2.0	33.4	0.1	79	10.1	5.5	21
28285	28270	j	Hammertoe oper one toe and sngl capsltmy	2.0	33.4	0.1	74	10.1	5.4	22
29292[a]			Bunionectomy	5.4	40.3	0.3	100	9.5	6.7	22
29292	29292	l	Bilateral bunionectomy	7.0	43.8	0.3	120	10.3	6.9	22
29292	28285	m	Bunionectomy, sngl and hammertoe, one toe	5.5	41.0	0.3	106	12.1	6.6	22
28140[a]			Partial metatarsectomy	1.9	33.7	0.1	66	10.1	5.3	20
28160[a]			Hemiphalangectomy, single toe	1.9	31.1	0.1	68	9.5	5.3	22
28160	28160	p	Hemiphalangectomy, two toes	2.0	31.3	0.1	73	10.4	5.4	22
28080[a]			Excis single interdig Morton's neuroma	2.1	34.3	0.1	67	10.4	5.0	22
28080	28080	r	Excis bilat interdig Morton's neuroma	2.1	35.0	0.1	82	11.7	5.3	22
28080[x2]	28140	s	Excis bilat neurma and prtl metatrsctomy	2.2	37.2	0.1	90	11.1	5.8	20
28080	28160	t	Excis sngl nrma & hemphlngctomy, sngl toe	2.1	34.5	0.1	83	9.7	5.6	22
28285	28080	u	Hmrtoe oper 1 toe and excis of sngl nrma	2.1	34.5	0.1	86	10.0	5.6	22
11422[a]			Excis sngl ben les (incl simple closure)	1.5	26.1	0.1	36	14.7	3.7	21
11422	11422	w	Excis two ben les (incl simple closure)	1.5	26.4	0.1	39	16.2	3.8	21

Appendix E, Table E.4 (continued)

Survey Estimates of Post Service Hospital and Office Visits
Oral and Maxillofacial Surgery -- Multiple Procedures

Primary Cpt	Secondary Cpt	Svc	Description	Hospital Visits		ICU Visits		Office Visits		No. of Responses
				Number of Visits	S.E*	Number of Visits	S.E*	Number of Visits	S.E*	
21422[a]		b	Tx pal, max fx, Lefort I	2.8	8.2%	0.5	15.0%	6.0	4.7%	21
21470	21422	c	Tx mandib fx & tx pal, max fx, Lefort I	3.8	6.6	1.2	7.9	7.1	4.4	21
21240	21240	e	Bilat TMJ arthroplasty	2.4	5.6	0.0	0.0	7.2	5.0	21
21060[a]		f	TMJH meniscectomy	2.0	8.3	0.0	0.0	6.2	6.8	20
21422	21060	g	Unil TMJ arthroplasty w TMJ meniscectomy	2.4	4.7	0.0	0.0	7.2	5.7	20
21147	21121	j	Lefort I osteotomy w genioplasty	4.2	3.8	1.1	6.3	7.3	2.9	21
21360[a]		k	Tx malar fx	2.2	9.3	0.0	5.6	4.5	6.7	21
21390[a]		l	Tx orbital floor blowout fx	2.6	12.3	0.1	7.8	5.0	7.6	21
21360	21390	m	Tx malar fx & tx orbital floor blowout fx	3.2	9.8	0.1	7.8	5.4	8.8	21
21247[a]		n	Reconstruct mandib condyle	3.8	5.9	0.3	13.3	7.3	5.6	19
21255[a]		o	Reconstruct zygom arch	4.0	6.4	0.3	14.1	7.1	6.0	18
21247	21255	p	Reconstruct mandib condyle & zygom arch	4.4	6.9	0.6	18.1	7.5	6.8	18
D7240[a]		q	Remov single impact wisdom tooth (full	0.2	12.7	0.0	0.0	1.3	11.7	20
D7240	D7240	r	Remov 2 impact wisdom teeth (full bony)	0.2	12.7	0.0	0.0	1.3	11.7	20
svc_r	D7240	s	Remov 4 impact wisdom teeth (full bony)	0.2	12.7	0.0	0.0	1.4	11.6	20
D7110[a]		t	Extract single erupted mandibular tooth	0.0	9.2	0.0	0.0	0.8	13.7	20
D7110	D7110	u	Extract 2 erupted mandibular teeth	0.0	9.2	0.0	0.0	0.9	13.5	20
svc_u	D7110	v	Extract 4 erupted mandibular teeth	0.0	9.2	0.0	0.0	1.0	12.9	20
21193[a]		w	Unilat recnstr mnd ram, C/L ost wo bon gft	2.4	10.5	0.1	7.8	6.5	4.6	21
21193	21193	x	Bilat recnstr mnd ram, C/L ost wo bon gft	2.7	9.0	0.2	10.6	6.6	4.8	21
21194[a]		y	Unilat recnstr mdn ram, C/L ost w bon grft	3.0	10.6	0.1	9.4	6.7	5.0	21
21194	21194	z	Bilat recnstr mnd ram, C/L ost w bon grft	3.1	10.5	0.3	12.9	6.8	5.1	21
21195[a]		aa	Unilat recnstr mnd ram, sag spl wo int fix	2.5	11.4	0.1	7.8	6.7	5.0	21
21195	21195	ab	Bilat recnstr mnd ram, sag spl wo int fix	2.7	10.2	0.2	10.6	6.8	5.2	21
21196[a]		ac	Unilat recnstr mnd ram, sag spl w int fix	2.6	10.2	0.1	7.8	6.6	5.3	21
21196	21196	ad	Bilat recnstr mnd ram, sag spl w int fix	2.9	8.7	0.3	11.6	6.9	5.0	21
21198[a]		ae	Unilat osteotomy, mandib, segmental	1.9	12.6	0.1	6.2	5.8	6.0	19
21198	21198	af	Bilat osteotomy, mandib, segmental	2.3	12.3	0.0	0.0	6.1	5.1	19
21206[a]		ag	Unilat osteotomy, maxilla, segmental	1.7	13.3	0.0	0.0	5.7	5.9	16
21206	21206	ah	Bilat osteotomy, maxilla, segmental	2.0	12.2	0.1	6.6	6.0	6.0	19

Appendix E, Table E.4 (continued)

Survey Estimates of Post Service Hospital and Office Visits
Neurosurgery -- Multiple Procedures

Primary Cpt	Secondary Cpt	Svc	Description	Hospital Visits Number of Visits	Hospital Visits S.E*	ICU Visits Number of Visits	ICU Visits S.E*	Office Visits Number of Visits	Office Visits S.E*	No. of Responses
63075	22554	c	Anter cerv diskectomy w arthrodesis	6.0	3.8%	0.0	0.0%	2.9	4.5%	14
22554	20661	e	Arthrodesis w appl cranial halo	6.7	7.0	0.3	15.5	3.8	12.7	14
22625	63047	h	Lumbar lamin w arthrodesis	7.0	6.8	0.1	11.8	3.1	11.2	14
svc_h	22842	i	Lumbar lamin w arthrodesis w instrmntion	7.4	6.8	0.3	15.5	3.3	12.3	14
61518	62180	l	Post fossa craniectomy w ventriculocistrn	11.6	2.5	2.1	15.1	3.3	5.3	15
61512	61512	n	Craniotomy, bilat or mult, supratent meng	9.5	3.9	2.0	15.8	3.0	5.4	15
61700	61700	p	Craniotomy, bilat or mult, clip aneurysm	12.6	2.4	2.8	16.7	3.3	5.1	15
61700	61711	r	Craniotomy, clip aneurysm w ECIC	12.9	3.4	2.9	17.9	3.4	5.9	15
svc_r	61340	t	Crantmy, clip anrysm w ECIC w subtem dcm	15.1	6.0	5.7	18.1	3.6	8.1	15
61518	61711	u	Post fossa craniectomy w ECIC	12.4	3.0	3.3	19.8	3.5	6.8	14
61500	62141	x	Craniectomy w excis tumor w cranioplasty	5.3	3.9	0.3	17.6	2.7	2.5	15
64719	64721	aa	Carpal tunnel rpr w ulnar nerve decomprss	0.1	9.3	0.0	0.0	3.6	1.6	13
63706	62223	ad	Rpr myelomeningocele w creation V-P shunt	8.5	3.8	0.5	28.8	3.1	6.7	13
63030	62284	ag	Myelogram foll by lumbar laminectomy	5.6	1.0	0.0	0.0	2.8	3.7	14
		ah	Mult trauma pt, neck fx, decmpr spn, fuse	13.6	13.1	3.5	24.7	2.9	23.5	13

Appendix E, Table E.4 (continued)

Survey Estimates of Post Service Hospital and Office Visits
Obstetrics and Gynecology -- Multiple Procedures

Primary Cpt	Secondary Cpt	Svc	Description	Hospital Visits		ICU Visits		Office Visits		No. of Responses
				Number of Visits	S.E*	Number of Visits	S.E*	Number of Visits	S.E*	
56300	58120	d	D&C w diagnostic laparoscopy	0.1	11.0%	0.0	0.0%	1.0	4.7%	15
56350	58120	e	D&C w diagnostic hysteroscopy	0.1	11.0	0.0	0.0	1.0	4.7	15
58150	57240	h	Abdom hystrctmy w anter colporrhaphy	4.9	4.1	0.0	3.1	2.6	2.0	15
58150	57270	k	Abdom hystrctmy w rpr enterocele	5.0	4.4	0.0	0.4	2.6	2.1	14
58150	57260	l	Abdom hystrctmy w comb anter colporrhaphy	5.0	4.3	0.0	0.4	2.7	3.5	15
58260	57260	n	Vag hystrctmy w comb anter colporrhaphy	4.6	5.6	0.0	3.1	2.3	6.0	15
57280	57260	p	Comb anter colporrhaphy w abd colpopexy	4.8	6.6	0.0	0.4	2.8	4.3	12
56303	56304	s	Surg laparscpy w fulgrtn w lysis adhesns	0.2	15.0	0.0	0.0	1.3	9.6	13
58760	56300	u	Diagnostic laparoscopy w fimbrioplasty	3.1	1.9	0.0	0.0	2.0	0.0	15
58140	58740	x	Myomectomy, sngl/mult w lysis adhesns	4.2	3.2	0.0	8.6	2.1	3.0	14
57282	57210	aa	Sacrosp lig fixtn, vag w colpoprnrrhphy	3.9	3.1	0.0	10.1	2.7	2.6	12
svcaa	57240	ab	Ant colporrhaphy w sacrosp lig fixtn, vag	4.1	4.3	0.0	10.1	2.7	2.8	12

Appendix E, Table E.4 (continued)

Survey Estimates of Post Service Hospital and Office Visits
Ophthalmology -- Multiple Procedures

Primary Cpt	Secondary Cpt	Svc	Description	Hospital Visits		ICU Visits		Office Visits		No. of Responses
				Number of Visits	S.E*	Number of Visits	S.E*	Number of Visits	S.E*	
65730	66984	c	Corneal trnsplnt w cataract remov & IOL	0.6	10.7%	0.0	0.0%	6.0	2.5%	17
65730	66170	e	Corneal trnsplnt w trabeculectomy	0.7	11.5	0.0	0.0	7.4	5.4	16
65755	66985	i	Corneal trnsplnt w secondary IOL	0.6	12.5	0.0	0.0	6.0	2.1	17
65755	67010	j	Corneal trnsplnt w anter vitrectomy	0.7	12.7	0.0	0.0	6.0	2.3	17
66985	67010	k	Anter vitrectomy w secondary IOL	0.5	14.4	0.0	0.0	5.1	4.6	18
svc_j	66985	l	Cornl trnspl w antr vitrctmy w scndry IO	0.6	10.7	0.0	0.0	6.2	3.1	17
66170	66984	n	Cataract remov & IOL w trabeculectomy	0.4	18.9	0.0	0.0	6.9	6.2	16
67036	66984	o	Cataract remov & IOL w vitrectomy	0.4	17.0	0.0	0.0	6.1	3.2	18
66984	67311	q	Strabismus srg w cataract remov & IOL	0.2	12.3	0.0	0.0	5.8	1.8	16
67107	65280	u	Rpr corn lacer w rpr reatt by sclr bk	1.3	12.2	0.0	7.5	5.9	6.0	16
svc_u	66840	v	Rpr corn lac w rpr reat, scl bk w cat xt	1.4	12.6	0.0	7.5	6.2	6.4	16
66180	66170	y	1st stg glauc drn impl w trabeculectomy	0.4	24.5	0.0	0.0	7.2	8.2	10
svc_y	67255	z	1st stg glauc drn impl w trab w scl rein	0.4	24.5	0.0	0.0	7.2	8.2	10
15820	15822	ac	Blepharoplasty, right lowr & uppr eyelids	0.0	0.0	0.0	0.0	3.6	1.4	16
15822	15822	ad	Bilat blepharoplasty, upper eyelids	0.0	0.0	0.0	0.0	3.6	1.4	16
67107	66761	af	Irid by las srg w rpr ret reatt, sclr bk	1.1	6.5	0.0	8.0	5.0	4.0	15
68700	67935	ai	Suture wound, eyelid w plast rpr canlcli	0.1	9.2	0.0	0.0	3.7	3.9	18

Appendix E, Table E.4 (continued)

Survey Estimates of Post Service Hospital and Office Visits
Orthopedic Surgery -- Multiple Procedures

Primary Cpt	Secondary Cpt	Svc	Description	Hospital Visits		ICU Visits		Office Visits		No. of Responses
				Number of Visits	S.E*	Number of Visits	S.E*	Number of Visits	S.E*	
28292	28292	b	Bilat bunionectomy, K/M/M	1.3	10.2%	0.0	0.0%	5.6	4.4%	13
28292	28285	d	Bunionectomy, K/M/M w hammertoe, one toe	1.1	5.5	0.0	0.0	5.3	3.8	13
29888	29881	g	Arthr meniscectomy w ACL reconstruction	2.7	2.8	0.0	0.0	4.4	4.1	12
27447	27447	i	Bilat tot knee replacement	11.1	5.8	0.1	10.1	4.6	5.4	12
25605	25605	k	ORIF bilat Colles'fracture	1.1	30.0	0.0	0.0	5.6	5.0	13
64721	64721	m	Bilat carpal tunnel rpr	0.4	17.5	0.0	0.0	4.0	4.4	13
64721	26055	o	Carpal tunnel rpr w tndn shth incis fngr	0.2	12.7	0.0	0.0	4.0	4.5	13
27506	27506	q	ORIF R & L femoral shaft fractures	10.0	8.8	0.8	29.1	5.9	6.5	12
27506	27814	t	ORIF femoral shaft fx & bimall ankle fx	7.8	2.4	0.1	10.1	5.9	6.4	12
svc_q	24515	u	ORIF R & L fem shaft fxs & humer shaft f	10.2	10.6	1.2	33.4	6.3	7.4	12
		x	Open tx crushed pelvis w fem neck fx	7.5	9.5	1.2	36.4	5.5	9.2	10
25260	25260	z	Rpr 5 lacr flxr tendns wrist	1.5	15.3	0.0	0.0	5.8	6.7	9
svc_z	64856	ab	Rpr 5 lacr flx tendns wrst w rpr medn nrv	5.2	3.8	0.0	0.0	4.7	16.7	9
64831	26350	ae	Rpr lacr flxr tendn finger w rpr digt nrv	2.1	4.6	0.0	0.0	3.9	12.7	9
svcae	26735	ag	Rpr flx tndn fngr w rpr dig nrv w ORIF f	2.4	9.2	0.0	0.0	5.0	10.0	9
		ai	Rad res neopl hip w tot hip repl w allog	11.0	7.8	1.2	38.8	5.3	10.7	10

Appendix E, Table E.4 (continued)

Survey Estimates of Post Service Hospital and Office Visits
Otolaryngology -- Multiple Procedures

Primary Cpt	Secondary Cpt	Svc	Description	Hospital Visits		ICU Visits		Office Visits		No. of Responses
				Number of Visits	S.E*	Number of Visits	S.E*	Number of Visits	S.E*	
30520	30140	c	Septoplasty w submuc resect turbinate	0.0	0.0%	0.0	0.0%	3.3	6.0%	10
69436	69436	e	Bilat tympanostomy	0.0	0.0	0.0	0.0	1.1	9.7	10
42820	69436	g	T & A w bilat tympanostomy	0.7	12.2	0.0	0.0	1.7	4.8	10
31600	31525	j	Plan trach w diag larngscpy	6.1	9.7	0.7	42.9	3.8	3.7	10
svc_j	31622	l	Plan trach w diag larngscpy w diag bronc	6.2	9.6	0.7	44.3	3.8	3.7	10
31622	31525	m	Diag larngscpy w diag bronch	0.3	25.6	0.1	13.6	1.3	12.2	9
31360	38724	p	Tot laryngctmy w modif radic neck dissect	12.9	4.3	1.9	22.1	5.3	3.7	10
svc_j	31395	r	Plan trach w diag laryng w pharnglrngctm	14.7	3.0	2.5	12.7	5.7	1.5	9
svc_r	15755	t	Pln trch w diag laryng w pharngl w fla	16.8	5.6	4.0	15.2	6.3	5.2	9
31200	31020	w	Anter ethmoidectomy w nas antral windows	0.6	14.0	0.0	0.0	3.7	3.8	10
31200	30115	y	Nas polypctmy w anter ethmoidectomy	0.7	14.4	0.0	0.0	3.7	3.7	10
41155	31600	aa	Plan trach w glossectomy & rad neck diss	13.5	2.7	2.5	9.3	5.6	1.3	9
svcaa	15732	ac	Pln trch w glssctmy & rad nck w musc fla	14.7	5.2	3.1	9.9	5.7	2.1	9
42145	30520	ae	Palatphrngplsty w septoplasty	3.0	6.2	0.5	22.1	3.3	4.5	10
svcae	30140	af	Palatphrng w septplsty w resect nas turb	3.0	6.2	0.5	22.1	3.4	5.4	10

Appendix E, Table E.4 (continued)

Survey Estimates of Post Service Hospital and Office Visits
Cardiothoracic Surgery -- Multiple Procedures

Primary Cpt	Secondary Cpt	Svc	Description	Hospital Visits: Number of Visits	Hospital Visits: S.E*	ICU Visits: Number of Visits	ICU Visits: S.E*	Office Visits: Number of Visits	Office Visits: S.E*	No. of Responses
33405	33430	c	AVR w a MVR	11.0	4.2%	4.1	7.9%	1.7	4.9%	17
33405	33512	e	AVR w CABGX3	10.6	4.3	3.5	10.0	1.7	3.5	17
33430	33512	f	MVR w CABGX3	10.9	4.6	3.6	10.3	1.7	4.2	17
33512	33425	h	Mitral valve rpr w CABGX3	11.0	4.7	3.6	10.4	1.7	4.9	17
39400	31622	k	Diagn bronch w mediastinoscopy	2.3	10.1	0.2	13.2	1.0	4.2	17
32100	31622	m	Diagn bronch w major thoracotomy	7.6	5.0	1.2	12.2	1.6	3.3	17
32100	39400	n	Mediastinoscopy w major thoracotomy	7.7	5.2	1.4	12.9	1.7	3.3	17
32480	31622	p	Diagn bronchoscopy w tot lobectomy	9.8	3.1	2.1	6.7	1.6	2.8	17
32480	39400	q	Mediastinoscopy w tot lobectomy	9.8	3.1	2.1	6.7	1.6	2.8	17
32440	31622	s	Diagn w tot pneumonectomy	9.1	3.8	2.2	7.2	1.7	4.1	17
33512	33212	u	CABGX3 w insert/repl pcmkr or AICD	10.3	5.4	3.0	12.2	1.7	4.9	17
33512	35301	w	Carotid endarterectomy w CABGX3	10.2	5.8	3.0	13.7	1.8	6.1	13
35556	35355	z	Iliofemoral endartrctmy w fem-pop bypass	7.1	5.7	0.8	32.5	3.5	0.0	11

Appendix E, Table E.4 (continued)

Survey Estimates of Post Service Hospital and Office Visits
Urology -- Multiple Procedures

Primary Cpt	Secondary Cpt	Svc	Description	Hospital Visits		ICU Visits		Office Visits		No. of Responses
				Number of Visits	S.E*	Number of Visits	S.E*	Number of Visits	S.E*	
54520	54520	b	Simple bilat orchiectomy	1.1	4.9%	0.0	0.0%	1.8	3.3%	20
52601	svc_b	d	TURP w simple bilat orchiectomy	4.1	1.6	0.0	0.0	2.8	2.1	20
52601	49505	g	TURP w inguinal hernia rpr, over age 5	4.1	2.4	0.0	0.0	2.8	2.8	19
52601	52317	h	TURP w simple litholapaxy	4.1	1.6	0.0	0.0	2.8	2.8	20
54640	54640	j	Bilat orchiopexy	0.8	10.4	0.0	0.0	2.1	2.5	18
50590	52332	m	Lithotripsy w cystourethroscopy	0.7	10.9	0.0	0.0	2.8	3.8	19
51596	43830	p	Complete cystectomy w temp gastrostomy	18.5	1.1	2.3	7.8	5.2	2.0	17
50080	50040	s	Nephrstlthtmy/pyelstlthtmy w nephrostomy	4.2	2.4	0.0	0.0	2.8	3.6	19
51845	51040	v	Cystostomy w an abdom-vag vesic neck susp	3.8	3.6	0.0	0.0	2.8	2.8	20
54530	54660	y	Radical orchiectomy w insert test prosth	2.0	2.0	0.0	0.0	2.8	2.9	20
52000	51726	ab	Cystourethroscopy w complex cysttrogrm	0.0	.	0.0	.	0.0	.	0
51741	51726	af	Complex cystometrgrm w complex uroflwmtry	0.0	.	0.0	.	0.0	.	0
51795	51772	ag	UPP w AP	0.0	.	0.0	.	0.0	.	0
svcag	51726	ah	Complex cystometrogrm w UPP w AP	0.0	.	0.0	.	0.0	.	0
svcaf	51795	ai	Cmplx cystmtrgrm w a cmplx uroflowm w AP	0.0	.	0.0	.	0.0	.	0

Appendix E Table E.5

Survey estimates of intra-service work and time
General surgery -- multiple procedures

Primary CPT	Secondary CPT		Description	Intra-service Work Mean	Work S.E*	Time (mins) Mean	Time (mins) S.E*	No.of responses
49500	49500	b	Bilat inguinal hernia rpr child	431	5.0%	74	3.3%	24
49500	54152	d	Hernia rpr for child w circumcision	367	2.9	63	2.4	24
38745	19120	g	Excis breast mass w axillary dissection	542	3.1	110	2.9	24
19240	19120	i	Excis breast mass w mod rad mastectomy	844	1.4	138	3.0	25
44140	44005	o	Ptl colctmy w extensive lysis of adhesns	1219	3.4	173	2.8	25
44140	47100	p	Ptl colctmy w wedge liver bx	1027	4.3	136	3.3	25
47120	44140	q	Ptl colctmy w resection liver	1750	3.4	258	3.1	25
44140	44950	r	Ptl colctmy w appendectomy.	955	1.6	125	2.9	25
44800	44950	t	Appendctmy w excis Meckel's divrticulum	628	2.8	99	2.1	25
47605	49560	w	Cholecyst w rpr ventral hernia	930	3.3	132	3.5	25
43324	43830	z	Nissen fundoplication w temp gastrostomy	994	3.4	168	1.9	25
43635	38100	ac	Hemigstrctmy w vagot w total splenectomy	1378	2.9	201	2.6	24
38100	49000	ae	Expl lap, trauma w tot splen	972	4.3	123	4.4	25
svcae	44140	af	Expl lap, trauma w tot splen w pt colctmy	1454	3.9	193	4.2	25

Appendix E Table E.5 (continued)

Survey estimates of intra-service work and time
Podiatry -- multiple procedures

Primary CPT	Secondary CPT		Description	Intra-service Work Mean	Work S.E*	Time (mins) Mean	Time (mins) S.E*	No.of responses
28270[a]			Capsul metars jnt fr contrctr, sngl jnt	101	12.0%	17	11.4%	22
28270	28270	b	Capsul metars jnt fr contrctr, two jnt	156	13.6	30	9.8	22
11750[a]			Excis nl & nl mtrx, part/comp, sngl nail	100	13.0	23	8.6	22
11750	11750	d	Excis nl & nl mtrx, part/comp, two nail	166	3.5	39	3.2	22
11750[x10]		e	Excis nl & nl mtrx, part/comp, ten nails	517	11.9	123	10.5	22
28285[a]			Hammertoe oper on one toe	187	9.3	33	5.2	22
28285	28285	g	Hammertoe oper on two toes, same ft	312	4.1	59	2.1	22
28285	28285	h	Hammertoe oper on two toes, one each ft	335	3.2	63	1.0	22
28285	11750	i	Hammertoe oper on one toe and excis nl	266	2.5	54	1.4	21
28285	28270	j	Hammertoe oper one toe and sngl capsltmy	270	5.8	45	4.5	22
29292[a]			Bunionectomy	271	14.1	60	5.6	22
29292	29292	l	Bilateral bunionectomy	505	1.6	118	2.3	22
29292	28285	m	Bunionectomy, sngl and hammertoe, one toe	430	2.6	90	1.1	22
28140[a]			Partial metatarsectomy	210	2.2	42	5.2	21
28160[a]			Hemiphalangectomy, single toe	181	1.2	31	1.3	22
28160	28160	p	Hemiphalangectomy, two toes	300	4.8	57	3.4	22
28080[a]			Excis single interdig Morton's neuroma	198	2.0	37	4.5	22
28080	28080	r	Excis bilat interdig Morton's neuroma	389	2.3	71	5.3	22
28080[x2]	28140	s	Excis bilat neurma and prtl metatrsctomy	503	4.5	107	3.5	21
28080	28160	t	Excis sngl nrma & hemiphlngctomy, sngl toe	367	2.3	64	3.7	22
28285	28080	u	Hmrtoe oper 1 toe and excis of sngl nrma	380	1.7	65	2.9	22
11422[a]			Excis sngl ben les (incl simple closure)	94	5.3	18	8.8	21
11422	11422	w	Excis two ben les (incl simple closure)	171	4.8	33	9.1	21

Appendix E Table E.5 (continued)

Survey estimates of intra-service work and time
Oral and maxillofacial surgery -- multiple procedures

Primary CPT	Secondary CPT		Description	Intra-service Work Mean	Work S.E*	Time (mins) Mean	Time (mins) S.E*	No.of responses
21422[a]		b	Tx pal, max fx, Lefort I	830	7.4%	112	6.8%	21
21470	21422	c	Tx mandib fx X tx pal, max fx, Lefort I	1924	5.2	272	4.4	21
21240	21240	e	Bilat TMJ arthroplasty	1413	4.7	231	4.9	21
21060[a]		f	TMJ meniscectomy	775	5.0	122	6.8	20
21422	21060	g	Unil TMJ arthroplasty w TMJ meniscectomy	1231	6.7	186	6.2	19
21147	21121	j	Lefort I osteotomy w genioplasty	2063	1.8	307	2.6	21
21360[a]		k	Tx malar fx	723	9.8	121	9.1	21
21390[a]		l	Tx orbital floor blowout fx	760	14.6	112	9.5	21
21360	21390	m	Tx malar fx X tx orbital floor blowout fx	1165	12.6	188	8.3	21
21247[a]		n	Reconstruct mandib condyle	1260	13.1	229	5.9	19
21255[a]		o	Reconstruct zygom arch	1188	12.8	221	7.3	18
21247	21255	p	Reconstruct mandib condyle X zygom arch	1949	14.5	282	17.5	18
D7240[a]		q	Remov single impact wisdom tooth (full	146	14.8	23	6.9	20
D7240	D7240	r	Remov 2 impact wisdom teeth (full bony)	236	18.2	39	6.9	20
svc_r	D7240	s	Remov 4 impact wisdom teeth (full bony)	389	20.8	62	7.6	20
D7110[a]		t	Extract single erupted mandibular tooth	60	12.5	15	10.2	20
D7110	D7110	u	Extract 2 erupted mandibular teeth	90	13.9	21	9.5	20
svc_u	D7110	v	Extract 4 erupted mandibular teeth	146	15.3	33	11.7	20
21193[a]		w	Unilat recnstr mnd ram, C/L ost wo bon gft	788	17.2	95	7.8	19
21193	21193	x	Bilat recnstr mnd ram, C/L ost wo bon gft	1260	15.5	163	6.7	19
21194[a]		y	Unilat reconstr mnd ram, C/L ost w bon grft	1040	15.2	158	5.3	20
21194	21194	z	Bilat recnstr mnd ram, C/L ost w bon grft	1591	14.6	234	5.0	20

Appendix E Table E.5 (continued)

Survey estimates of intra-service work and time
Oral and maxillofacial surgery -- multiple procedures

Primary CPT	Secondary CPT		Description	Intra-service Work Mean	Work S.E*	Time (mins) Mean	Time (mins) S.E*	No.of responses
21195[a]		aa	Unilat recnstr mnd ram, sag spl wo int fix	830	16.1%	79	9.6%	21
21195	21195	ab	Bilat recnstr mnd ram, sag spl wo int fix	1296	14.7	143	9.8	21
21196[a]		ac	Unilat recnstr mnd ram, sag spl w int fix	1010	15.4	105	8.8	21
21196	21196	ad	Bilat recnstr mnd ram, sag spl w int fix	1530	13.6	187	9.9	21
21198[a]		ae	Unilat recnstr mnd ram, sag spl w int fix	722	19.5	96	7.4	19
21198	21198	af	Bilat osteotomy, mandib, segmental	1101	20.0	164	7.7	18
21206[a]		ag	Unilat osteotomy, maxilla, segmental	744	21.5	108	7.5	17
21206	21206	ah	Bilat osteotomy, maxilla, segmental	1171	19.0	173	7.9	18

Appendix E Table E.5 (continued)

Survey estimates of intra-service work and time
Neurosurgery -- multiple procedures

Primary CPT	Secondary CPT		Description	Intra-service Work Mean	Work S.E*	Time (mins) Mean	Time (mins) S.E*	No.of responses
63075	22554	c	Anter cerv diskectomy w arthrodesis	1554	5.1%	192	4.4%	14
22554	20661	e	Arthrodesis w appl cranial halo	1318	3.5	211	4.9	14
22625	63047	h	Lumbar lamin w arthrodesis	1813	3.3	281	3.1	14
svc_h	22842	i	Lumbar lamin w arthrodesis w instrmntion	2363	4.6	359	3.6	14
61518	62180	l	Post fossa craniectomy w ventriculocistrn	2736	2.6	374	3.0	15
61512	61512	n	Craniotomy, bilat or mult, supratent meng	2720	4.8	375	5.0	15
61700	61700	p	Craniotomy, bilat or mult, clip aneurysm	3715	6.4	424	5.5	15
61700	61711	r	Craniotomy, clip aneurysm w ECIC	3927	5.0	440	5.2	15
svc_r	61340	t	Crantmy, clip anrysm w ECIC w subtem dcmp	4198	5.0	469	4.6	15
61518	61711	u	Post fossa craniectomy w ECIC	3890	4.8	457	5.7	13
61500	62141	x	Craniectomy w excis tumor w cranioplasty	1785	5.2	225	3.8	15
64719	64721	aa	Carpal tunnel rpr w ulnar nerve decomprss	346	4.4	83	2.7	14
63706	62223	ad	Rpr myelomeningocele w creation V-P shunt	1790	4.1	304	0.3	13
63030	62284	ag	Myelogram foll by lumbar laminectomy	760	2.3	123	5.0	14
		ah	Mult trauma pt, neck fx, decmpr spn, fuse	2898	9.4	458	5.4	14

Appendix E Table E.5 (continued)

Survey estimates of intra-service work and time
Obstetrics and gynecology -- multiple procedures

Primary CPT	Secondary CPT		Description	Intra-service Work Mean	Work S.E*	Time (mins) Mean	Time (mins) S.E*	No.of responses
56300	58120	d	D&C w diagnostic laparoscopy	288	3.0%	46	3.2%	15
56350	58120	e	D&C w diagnostic hysteroscopy	198	6.8	34	4.6	15
58150	57240	h	Abdom hystrctmy w anter colporrhaphy	777	1.3	127	3.6	15
58150	57270	k	Abdom hystrctmy w rpr enterocele	811	3.4	117	3.9	14
58150	57260	l	Abdom hystrctmy w comb anter colporrhaphy	869	1.7	141	4.7	14
58260	57260	n	Vag hystrctmy w comb anter colporrhaphy	766	2.1	110	4.6	15
57280	57260	p	Comb anter colporrhaphy w abd colpopexy	642	2.1	116	6.2	12
56303	56304	s	Surg laparscpy w fulgrtn w lysis adhesns	475	3.7	65	5.1	14
58760	56300	u	Diagnostic laparoscopy w fimbrioplasty	518	4.5	107	4.0	15
58140	58740	x	Myomectomy, sngl/mult w lysis adhesns	494	3.0	103	4.8	14
57282	57210	aa	Sacrosp lig fixtn, vag w colpoprnrrhphy	515	3.2	104	2.5	12
svcaa	57240	ab	Ant colporrhaphy w sacrosp lig fixtn, vag	625	6.0	126	3.8	12

Appendix E Table E.5 (continued)

Survey estimates of intra-service work and time
Ophthalmology -- multiple procedures

Primary CPT	Secondary CPT		Description	Intra-service Work Mean	Work S.E*	Time (mins) Mean	Time (mins) S.E*	No.of responses
65730	66984	c	Corneal trnsplnt w cataract remov & IOL	1368	4.2%	124	1.8%	18
65730	66170	e	Corneal trnsplnt w trabeculectomy	1325	3.6	124	3.3	16
65755	66985	i	Corneal trnsplnt w secondary IOL	1166	2.9	121	2.6	17
65755	67010	j	Corneal trnsplnt w anter vitrectomy	1108	3.2	121	2.4	17
66985	67010	k	Anter vitrectomy w secondary IOL	791	4.4	73	5.3	18
svc_j	66985	l	Cornl trnspl w antr vitrctmy w scndry IOL	1406	4.7	144	2.8	17
66170	66984	n	Cataract remov & IOL w trabeculectomy	1134	3.7	98	5.1	15
67036	66984	o	Cataract remov & IOL w vitrectomy	1198	3.6	133	7.1	17
66984	67311	q	Strabismus srg w cataract remov & IOL	854	2.7	89	1.0	17
67107	65280	u	Rpr corn lacer w rpr reatt by sclr bk	1280	2.1	174	2.1	17
svc_u	66840	v	Rpr corn lac w rpr reat, scl bk w cat xtr	1668	3.1	204	3.9	17
66180	66170	y	1st stg glauc drn impl w trabeculectomy	1157	4.0	123	3.1	10
svc_y	67255	z	1st stg glauc drn impl w trab w scl reinf	1586	5.5	170	7.5	9
15820	15822	ac	Blepharoplasty, right lowr X uppr eyelids	428	3.4	66	2.7	17
15822	15822	ad	Bilat blepharoplasty, upper eyelids	412	5.2	77	8.0	17
67107	66761	af	Irid by las srg w rpr ret reatt, sclr bk	1100	3.3	132	2.0	16
68700	67935	ai	Suture wound, eyelid w plast rpr canlcli	523	3.3	108	1.9	18

Appendix E Table E.5 (continued)

Survey estimates of intra-service work and time
Orthopedic surgery -- multiple procedures

Primary CPT	Secondary CPT		Description	Intra-service Work Mean	Work S.E*	Time (mins) Mean	Time (mins) S.E*	No.of responses
28292	28292	b	Bilat bunionectomy, K/M/M	508	4.7%	105	6.1%	13
28292	28285	d	Bunionectomy, K/M/M w hammertoe, one toe	396	2.9	79	5.3	13
29888	29881	g	Arthr meniscectomy w ACL reconstruction	1128	5.0	165	3.7	12
27447	27447	i	Bilat tot knee replacement	2027	6.1	252	5.8	12
25605	25605	k	ORIF bilat Colles'fracture	375	10.5	88	10.4	13
64721	64721	m	Bilat carpal tunnel rpr	302	4.3	68	2.5	13
64721	26055	o	Carpal tunnel rpr w tndn shth incis fngr	228	4.1	57	5.5	13
27506	27506	q	ORIF R X L femoral shaft fractures	1546	4.3	232	3.1	12
27506	27814	t	ORIF femoral shaft fx X bimall ankle fx	1250	2.0	191	4.5	12
svc_q	24515	u	ORIF R X L fem shaft fxs X humer shaft fx	2048	6.3	302	7.6	12
		x	Open tx crushed pelvis w fem neck fx	2188	14.1	278	12.7	8
25260	25260	z	Rpr 5 lacr flxr tendns wrist	871	17.0	116	12.2	9
svc_z	64856	ab	Rpr 5 lacr flx tendns wrst w rpr medn nrv	1426	15.8	205	7.2	9
64831	26350	ae	Rpr lacr flxr tendn finger w rpr digt nrv	730	4.1	107	3.6	9
svcae	26735	ag	Rpr flx tndn fngr w rpr dig nrv w ORIF fx	924	7.2	149	3.8	9
		ai	Rad res neopl hip w tot hip repl w allogr	2597	11.2	309	6.5	10

Appendix E Table E.5 (continued)

Survey estimates of intra-service work and time
Otolaryngology -- multiple procedures

Primary CPT	Secondary CPT		Description	Intra-service Work Mean	Work S.E*	Time (mins) Mean	Time (mins) S.E*	No.of responses
30520	30140	c	Septoplasty w submuc resect turbinate	441	3.0%	82	3.8%	10
69436	69436	e	Bilat tympanostomy	148	8.8	15	7.6	10
42820	svc_e	g	T & A w bilat tympanostomy	273	8.2	47	5.9	10
31600	31525	j	Plan trach w diag larngscpy	346	5.2	47	3.6	10
svc_j	31622	l	Plan trach w diag larngscpy w diag bronch	485	9.8	71	8.1	10
31622	31525	m	Diag larngscpy w diag bronch	311	7.2	51	5.9	10
31360	38724	p	Tot laryngctmy w modif radic neck dissect	1397	5.4	260	6.9	10
svc_j	31395	r	Plan trach w diag laryng w pharnglrngctmy	2206	1.3	417	1.6	9
svc_r	15755	t	Pln trch w diag laryng w pharngl w flap	4243	1.8	825	5.0	9
31200	31020	w	Anter ethmoidectomy w nas antral windows	375	3.6	66	5.3	10
31200	30115	y	Nas polypctmy w anter ethmoidectomy	451	6.3	74	6.2	10
41155	31600	aa	Plan trach w glossectomy & rad neck diss	1552	1.4	368	2.4	9
svcaa	15732	ac	Pln trch w glssctmy & rad nck w musc flap	2277	3.0	533	2.6	9
42145	30520	ae	Palatphrngplsty w septoplasty	644	5.5	117	4.7	10
svcae	30140	af	Palatphrng w septplsty w resect nas turb	766	7.2	142	6.3	10

Appendix E Table E.5 (continued)

Survey estimates of intra-service work and time
Cardiothoracic surgery -- multiple procedures

Primary CPT	Secondary CPT		Description	Intra-service Work Mean	Work S.E*	Time (mins) Mean	Time (mins) S.E*	No.of responses
33405	33430	c	AVR w a MVR	2689	4.4%	278	5.3%	17
33405	33512	e	AVR w CABGX3	2497	4.6	292	4.8	17
33430	33512	f	MVR w CABGX3	2617	4.4	302	4.5	17
33512	33425	h	Mitral valve rpr w CABGX3	2763	4.2	317	5.1	17
39400	31622	k	Diagn bronch w mediastinoscopy	392	5.6	82	4.9	17
32100	31622	m	Diagn bronch w major thoracotomy	538	7.7	125	3.0	17
32100	39400	n	Mediastinoscopy w major thoracotomy	627	5.6	145	2.7	17
32480	31622	p	Diagn bronchoscopy w tot lobectomy	1070	1.8	171	4.1	17
32480	39400	q	Mediastinoscopy w tot lobectomy	1182	1.8	184	3.0	17
32440	31622	s	Diagn w tot pneumonectomy	1195	1.5	177	2.9	17
33512	33212	u	CABGX3 w insert/repl pcmkr or AICD	1802	1.2	261	3.7	17
33512	35301	w	Carotid endarterectomy w CABGX3	2401	3.1	315	3.3	14
35556	35355	z	Iliofemoral endartrctmy w fem-pop bypass	1664	5.4	288	7.6	11

Appendix E Table E.5 (continued)

Survey estimates of intra-service work and time
Urology -- multiple procedures

Primary CPT	Secondary CPT		Description	Intra-service Work Mean	Work S.E*	Time (mins) Mean	Time (mins) S.E*	No.of responses
54520	54520	b	Simple bilat orchiectomy	425	4.4	56	4.7	21
52601	svc_b	d	TURP w simple bilat orchiectomy	1027	2.9	110	2.9	21
52601	49505	g	TURP w inguinal hernia rpr, over age 5	981	1.8	120	2.2	19
52601	52317	h	TURP w simple litholapaxy	1086	3.8	105	2.8	21
54640	54640	j	Bilat orchiopexy	760	3.8	133	4.4	19
50590	52332	m	Lithotripsy w cystourethroscopy	869	2.1	102	2.8	19
51596	43830	p	Complete cystectomy w temp gastrostomy	2470	0.7	482	1.4	18
50080	50040	s	Nephrstlthtmy/pyelstlthtmy w nephrostomy	1289	6.7	162	6.5	19
51845	51040	v	Cystostomy w an abdom-vag vesic neck susp	771	2.6	85	2.5	21
54530	54660	y	Radical orchiectomy w insert test prosth	645	3.1	78	3.0	21
52000	51726	ab	Cystourethroscopy w complex cystometrogrm	162	3.9	46	5.4	19
51741	51726	af	Complex cystometrgrm w complex uroflwmtry	173	4.9	52	7.6	20
51795	51772	ag	UPP w AP	215	5.0	54	6.9	19
svcag	51726	ah	Complex cystometrogrm w UPP w AP	262	7.3	70	8.9	19
svcaf	51795	ai	Cmplx cystmtrgrm w a cmplx uroflowm w AP	262	7.3	73	9.0	19

Appendix E Table E.6

Group values of pre-/post- and total-service work:
General surgery -- multiple procedures

Primary CPT	Secondary CPT	Svc	Description	Service Work Pre/Post	Service Work Total
44140	44005	o	Ptl colctmy w extensive lysis of adhesns	972	2191
44140	47100	p	Ptl colctmy w wedge liver bx	973	2000
47120	44140	q	Ptl colctmy w resection liver	901	2650
44140	44950	r	Ptl colctmy w appendectomy.	958	1913
49500	49500	b	Bilat inguinal hernia rpr child	246	677
44800	44950	t	Appendctmy w excis Meckel's divrticulum	560	1188
47605	49560	w	Cholecyst w rpr ventral hernia	613	1543
43324	43830	z	Nissen fundoplication w temp gastrostomy	794	1788
43635	38100	ac	Hemigstrctmy w vagot w total splenectomy	900	2278
38100	49000	ae	Expl lap, trauma w tot splen	738	1710
svcae	44140	af	Expl lap, trauma w tot splen w pt colctmy	895	2349
49500	54152	d	Hernia rpr for child w circumcision	257	624
38745	19120	g	Excis breast mass w axillary dissection	505	1047
19240	19120	i	Excis breast mass w mod rad mastectomy	785	1629

Appendix E Table E.6 (continued)

Group values of pre-/post- and total-service work:
Podiatry -- multiple procedures

Primary CPT	Secondary CPT	Svc	Description	Service Work Pre/Post	Service Work Total
28270			Capsul metars jnt fr contrctr, sngl jnt	270	371
28270	28270	b	Capsul metars jnt fr contrctr, two jnt	289	445
11750			Excis nl & nl mtrx, part/comp, sngl nail	143	243
11750	11750	d	Excis nl & nl mtrx, part/comp, two nail	158	324
11750^{x10}		e	Excis nl & nl mtrx, part/comp, ten nails	203	719
28285			Hammertoe oper on one toe	346	533
28285	28285	g	Hammertoe oper on two toes, same ft	377	689
28285	28285	h	Hammertoe oper on two toes, one each ft	414	748
28285	11750	i	Hammertoe oper on one toe and excis nl	402	668
28285	28270	j	Hammertoe oper one toe and sngl capsltmy	382	652
29292			Bunionectomy	486	757
29292	29292	l	Bilateral bunionectomy	570	1075
29292	28285	m	Bunionectomy, sngl and hammertoe, one toe	516	946
28140			Partial metatarsectomy	351	561
28160			Hemiphalangectomy, single toe	353	534
28160	28160	p	Hemiphalangectomy, two toes	378	678
28080			Excis single interdig Morton's neuroma	354	552
28080	28080	r	Excis bilat interdig Morton's neuroma	414	803
28080^{x2}	28140	s	Excis bilat neurma and prtl metatrsctomy	457	960
28080	28160	t	Excis sngl nrma & hemiphlngctomy, sngl toe	421	788
28285	28080	u	Hmrtoe oper 1 toe and excis of sngl nrma	433	813
11422			Excis sngl ben les (incl simple closure)	125	219
11422	11422	w	Excis two ben les (incl simple closure)	132	303

Appendix E Table E.6 (continued)

Group values of pre-/post- and total-service work:
Oral and maxillofacial surgery -- multiple procedures

Primary CPT	Secondary CPT	Svc	Description	Service Work Pre/Post	Service Work Total
21147	21121	j	Lefort I osteotomy w genioplasty	1197	3260
21390	21360	m	Tx malar fx & tx orbital floor blowout fx	640	1805
21247	21255	p	Reconstruct mandib condyle & zygom arch	869	2818
D7240	D7240	r	Remov 2 impact wisdom teeth (full bony)	141	377
svc_r	D7240	s	Remov 4 impact wisdom teeth (full bony)	155	544
D7110	D7110	u	Extract 2 erupted mandibular teeth	131	221
svc_u	D7110	v	Extract 4 erupted mandibular teeth	139	284
21193	21193	x	Bilat recnstr mnd ram, C/L ost wo bon gft	668	1928
21194	21194	z	Bilat recnstr mnd ram, C/L ost w bon grft	731	2323
21195	21195	ab	Bilat recnstr mnd ram, sag spl wo int fix	1174	2470
21470	21422	c	Tx mandib fx & tx pal, max fx, Lefort I	423	2348
21196	21196	ad	Bilat recnstr mnd ram, sag spl w int fix	1283	2813
21198	21198	af	Bilat osteotomy, mandib, segmental	617	1719
21206	21206	ah	Bilat osteotomy, maxilla, segmental	596	1767
21240	21240	e	Bilat TMJ arthroplasty	583	1996
21240	21060	g	Unil TMJ arthroplasty w TMJ meniscectomy	584	1815

Appendix E Table E.6 (continued)

Group values of pre-/post- and total-service work:
Neurosurgery -- multiple procedures

Primary CPT	Secondary CPT	Svc	Description	Service Work Pre/Post	Service Work Total
61518	62180	l	Post fossa craniectomy w ventriculocistrn	1058	3794
61512	61512	n	Craniotomy, bilat or mult, supratent meng	862	3582
61700	61700	p	Craniotomy, bilat or mult, clip aneurysm	1147	4862
61700	61711	r	Craniotomy, clip aneurysm w ECIC	1188	5115
svc_r	61340	t	Crantmy, clip anrysm w ECIC w subtem dcmp	1333	5530
61518	61711	u	Post fossa craniectomy w ECIC	1152	5042
61500	62141	x	Craniectomy w excis tumor w cranioplasty	513	2298
64719	64721	aa	Carpal tunnel rpr w ulnar nerve decomprss	222	568
63075	22554	c	Anter cerv diskectomy w arthrodesis	1011	2564
63706	62223	ad	Rpr myelomeningocele w creation V-P shunt	601	2390
63030	62284	ag	Myelogram foll by lumbar laminectomy	623	1383
22554	20661	e	Arthrodesis w appl cranial halo	914	2232
22625	63047	h	Lumbar lamin w arthrodesis	813	2626
svc_h	22842	i	Lumbar lamin w arthrodesis w instrmntion	870	3233

Appendix E Table E.6 (continued)

Group values of pre-/post- and total-service work:
Obstetrics and gynecology -- multiple procedures

Primary CPT	Secondary CPT	Svc	Description	Service Work Pre/Post	Service Work Total
58150	57270	k	Abdom hystrctmy w rpr enterocele	729	1540
58150	57260	l	Abdom hystrctmy w comb anter colporrhaphy	739	1608
58260	57260	n	Vag hystrctmy w comb anter colporrhaphy	683	1449
57280	57260	p	Comb anter colporrhaphy w abd colpopexy	526	1167
56303	56304	s	Surg laparscpy w fulgrtn w lysis adhesns	307	781
58760	56300	u	Diagnostic laparoscopy w fimbrioplasty	449	967
58140	58740	x	Myomectomy, sngl/mult w lysis adhesns	422	915
57282	57210	aa	Sacrosp lig fixtn, vag w colpoprnrrhphy	495	1010
svcaa	57240	ab	Ant colporrhaphy w sacrosp lig fixtn, vag	510	1135
56300	58120	d	D&C w diagnostic laparoscopy	155	443
56350	58120	e	D&C w diagnostic hysteroscopy	147	345
58150	57240	h	Abdom hystrctmy w anter colporrhaphy	729	1506

Appendix E Table E.6 (continued)

Group values of pre-/post- and total-service work:
Ophthalmology -- multiple procedures

Primary CPT	Secondary CPT	Svc	Description	Service Work Pre/Post	Service Work Total
65755	67010	j	Corneal trnsplnt w anter vitrectomy	473	1582
66985	67010	k	Anter vitrectomy w secondary IOL	460	1251
svc_j	66985	l	Cornl trnspl w antr vitrctmy w scndry IOL	494	1900
66170	66984	n	Cataract remov & IOL w trabeculectomy	676	1810
67036	66984	o	Cataract remov & IOL w vitrectomy	532	1730
66984	67311	q	Strabismus srg w cataract remov & IOL	378	1232
67107	65280	u	Rpr corn lacer w rpr reatt by sclr bk	589	1869
svc_u	66840	v	Rpr corn lac w rpr reat, scl bk w cat xtr	612	2280
66180	66170	y	1st stg glauc drn impl w trabeculectomy	461	1618
svc_y	67255	z	1st stg glauc drn impl w trab w scl reinf	475	2061
15820	15822	ac	Blepharoplasty, right lowr & uppr eyelids	278	705
65730	66984	c	Corneal trnsplnt w cataract remov & IOL	400	1768
15822	15822	ad	Bilat blepharoplasty, upper eyelids	271	683
67107	66761	af	Irid by las srg w rpr ret reatt, sclr bk	537	1637
68700	67935	ai	Suture wound, eyelid w plast rpr canlcli	320	844
65730	66170	e	Corneal trnsplnt w trabeculectomy	460	1784
65755	66985	i	Corneal trnsplnt w secondary IOL	475	1640

Appendix E Table E.6 (continued)

Group values of pre-/post- and total-service work:
Orthopedic surgery -- multiple procedures

Primary CPT	Secondary CPT	Svc	Description	Service Work Pre/Post	Service Work Total
25605	25605	k	ORIF bilat Colles'fracture	470	846
64721	64721	m	Bilat carpal tunnel rpr	298	600
64721	26055	o	Carpal tunnel rpr w tndn shth incis fngr	277	504
27506	27506	q	ORIF R & L femoral shaft fractures	975	2521
28292	28292	b	Bilat bunionectomy, K/M/M	409	917
27506	27814	t	ORIF femoral shaft fx & bimall ankle fx	843	2093
svc_q	24515	u	ORIF R & L fem shaft fxs & humer shaft fx	1068	3115
25260	25260	z	Rpr 5 lacr flxr tendns wrist	413	1284
svc_z	64856	ab	Rpr 5 lacr flx tendns wrst w rpr medn nrv	595	2021
64831	26350	ae	Rpr lacr flxr tendn finger w rpr digt nrv	453	1183
svcae	26735	ag	Rpr flx tndn fngr w rpr dig nrv w ORIF fx	519	1443
28292	28285	d	Bunionectomy, K/M/M w hammertoe, one toe	378	774
29888	29881	g	Arthr meniscectomy w ACL reconstruction	493	1621
27447	27447	i	Bilat tot knee replacement	926	2953

Appendix E Table E.6 (continued)

Group values of pre-/post- and total-service work:
Otolaryngology -- multiple procedures

Primary CPT	Secondary CPT	Svc	Description	Service Work Pre/Post	Service Work Total
31600	31525	j	Plan trach w diag larngscpy	549	896
svc_j	31622	l	Plan trach w diag larngscpy w diag bronch	556	1042
31622	31525	m	Diag larngscpy w diag bronch	127	437
31360	38724	p	Tot laryngctmy w modif radic neck dissect	792	2189
svc_j	31395	r	Plan trach w diag laryng w pharnglrngctmy	1178	3385
svc_r	15755	t	Pln trch w diag laryng w pharngl w flap	1362	5605
31200	31020	w	Anter ethmoidectomy w nas antral windows	204	579
31200	30115	y	Nas polypctmy w anter ethmoidectomy	208	659
41155	31600	aa	Plan trach w glossectomy & rad neck diss	1026	2577
svcaa	15732	ac	Pln trch w glssctmy & rad nck w musc flap	1119	3396
30520	30140	c	Septoplasty w submuc resect turbinate	250	691
42145	30520	ae	Palatphrngplsty w septoplasty	409	1053
svcae	30140	af	Palatphrng w septplsty w resect nas turb	415	1181
69436	69436	e	Bilat tympanostomy	97	244
42820	svc_e	g	T & A w bilat tympanostomy	228	501

Appendix E Table E.6 (continued)

Group values of pre-/post- and total-service work:
Plastic surgery -- multiple procedures

Primary CPT	Secondary CPT	Svc	Description	Service Work Pre/Post	Service Work Total
15820	15820	z1	Bilat blephoroplasty, low lid	281	654
15821	15821	z2	Bilat blephoroplasty, low lid w fat pad	298	732
15822	15822	z3	Bilat blephoroplasty, upp lid	284	613
19328	19328	z4	Bilat remov intact mammary implant	319	695
19330	19330	z5	Bilat remov mammary implant mat	381	912

Appendix E Table E.6 (continued)

Group values of pre-/post- and total-service work:
Cardiothoracic surgery -- multiple procedures

Primary CPT	Secondary CPT	Svc	Description	Service Work Pre/Post	Service Work Total
39400	31622	k	Diagn bronch w mediastinoscopy	282	674
32100	31622	m	Diagn bronch w major thoracotomy	670	1207
32100	39400	n	Mediastinoscopy w major thoracotomy	687	1315
32480	31622	p	Diagn bronchoscopy w tot lobectomy	836	1906
32480	39400	q	Mediastinoscopy w tot lobectomy	849	2031
32440	31622	s	Diagn w tot pneumonectomy	928	2123
33512	33212	u	CABGX3 w insert/repl pcmkr or AICD	1172	2974
33512	35301	w	Carotid endarterectomy w CABGX3	1190	3591
35556	35355	z	Iliofemoral endartrctmy w fem-pop bypass	715	2378
33405	33430	c	AVR w a MVR	1364	4053
33405	33512	e	AVR w CABGX3	1331	3828
33430	33512	f	MVR w CABGX3	1393	4010
33512	33425	h	Mitral valve rpr w CABGX3	1236	3999

Appendix E Table E.6 (continued)

Group values of pre-/post- and total-service work:
Urology -- multiple procedures

Primary CPT	Secondary CPT	Svc	Description	Service Work Pre/Post	Service Work Total
54640	54640	j	Bilat orchiopexy	252	1013
50590	52332	m	Lithotripsy w cystourethroscopy	311	1179
51596	43830	p	Complete cystectomy w temp gastrostomy	1362	3832
50080	50040	s	Nephrstlthtmy/pyelstlthtmy w nephrostomy	549	1839
54520	54520	b	Simple bilat orchiectomy	227	652
51845	51040	v	Cystostomy w an abdom-vag vesic neck susp	376	1147
54530	54660	y	Radical orchiectomy w insert test prosth	364	1009
52000	51726	ab	Cystourethroscopy w complex cystometrogrm	134	295
51741	51726	af	Complex cystometrgrm w complex uroflwmtry	71	244
51795	51772	ag	UPP w AP	66	281
svcag	51726	ah	Complex cystometrogrm w UPP w AP	73	335
svcaf	51795	ai	Cmplx cystmtrgrm w a cmplx uroflowm w AP	76	338
52601	svc_b	d	TURP w simple bilat orchiectomy	494	1521
52601	49505	g	TURP w inguinal hernia rpr, over age 5	503	1484
52601	52317	h	TURP w simple litholapaxy	489	1575

Appendix E Table E.7

Comparison of intra-service time of primary and secondary codes:
General surgery

Primary CPT	Secondary CPT	Svc	Description	Intra-time primary	Added[a] intra-time secndry	Intra-[b] time secndry alone	Ratio[c]
44140	44005	o	Ptl colctmy w extensive lysis of adhesns	104	69	80	0.86
44140	47100	p	Ptl colctmy w wedge liver bx	104	32	51	0.63
47120	44140	q	Ptl colctmy w resection liver	195	63	104	0.61
44140	44950	r	Ptl colctmy w appendectomy.	104	21	51	0.41
49500	49500	b	Bilat inguinal hernia rpr child	40	34	40	0.85
44800	44950	t	Appendctmy w excis Meckel's divrticulum	80	19	51	0.37
47605	49560	w	Cholecyst w rpr ventral hernia	82	50	73	0.69
43324	43830	z	Nissen fundoplication w temp gastrostomy	141	27	51	0.53
43635	38100	ac	Hemigstrctmy w vagot w total splenectomy	162	39	91	0.43
38100	49000	ae	Expl lap, trauma w tot splen	91	32	66	0.48
svcae	44140	af	Expl lap, trauma w tot splen w pt colctmy	123	70	104	0.67
49500	54152	d	Hernia rpr for child w circumcision	40	23	30	0.77
38745	19120	g	Excis breast mass w axillary dissection	80	30	35	0.85
19240	19120	i	Excis breast mass w mod rad mastectomy	104	34	35	0.98

[a] Added intra-time is the intra-time of the multiple vignette minus the intra-time of the primary service (unless indicated).
[b] Intra-time of the secondary service is the time of the secondary service performed alone.
[c] Ratio = Added intra-service time of secondary service divided by intra-service time of secondary service performed alone.
[d] Computed as the average of each additional service.

Appendix E Table E.7 (continued)

Comparison of intra-service time of primary and secondary codes:
Podiatry

Primary CPT	Secondary CPT	Svc	Description	Intra-time primary	Added[a] intra-time secndry	Intra-[b] time secndry alone	Ratio[c]
28270	28270	b	Capsul metars jnt fr contrctr, two jnt	17	13	17	.76
11750	11750	d	Excis nl & nl mtrx, part/comp, two nail	23	16	23	.70
11750[x10]		e	Excis nl & nl mtrx, part/comp, ten nails	23	11[d]	23	.48
28285	28285	g	Hammertoe oper on two toes, same ft	33	26	33	.79
28285	28285	h	Hammertoe oper on two toes, one each ft	33	30	33	.91
28285	11750	i	Hammertoe oper on one toe and excis nl	33	21	23	.91
28285	28270	j	Hammertoe oper one toe and sngl capsltmy	33	12	17	.71
29292	29292	l	Bilateral bunionectomy	60	58	60	.97
29292	28285	m	Bunionectomy, sngl and hammertoe, one toe	60	30	33	.91
28160	28160	p	Hemiphalangectomy, two toes	31	26	31	.84
28080	28080	r	Excis bilat interdig Morton's neuroma	37	34	37	.92
28080[x2]	28140	s	Excis bilat neurma and prtl metatrsctomy	71	36	42	.86
28080	28160	t	Excis sngl nrma & hemiphlngctomy, sngl toe	37	27	31	.87
28285	28080	u	Hmrtoe oper 1 toe and excis of sngl nrma	33	32	37	.86
11422	11422	w	Excis two ben les (incl simple closure)	18	15	18	.83

[a] Added intra-time is the intra-time of the multiple vignette minus the intra-time of the primary service (unless indicated).
[b] Intra-time of the secondary service is the time of the secondary service performed alone.
[c] Ratio = Added intra-service time of secondary service divided by intra-service time of secondary service performed alone.
[d] Computed as the average of each additional service.

Appendix E Table E.7 (continued)

Comparison of intra-service time of primary and secondary codes:
Oral and maxillofacial surgery

Primary CPT	Secondary CPT	Svc	Description	Intra-time primary	Added[a] intra-time secndry	Intra-[b] time secndry alone	Ratio[c]
21147	21121	j	Lefort I osteotomy w genioplasty	252	55	64	0.85
21390	21360	m	Tx malar fx & tx orbital floor blowout fx	112	76	121	0.63
21247	21255	p	Reconstruct mandib condyle & zygom arch	229	53	221	0.24
D7240	D7240	r	Remov 2 impact wisdom teeth (full bony)	23	16	23	0.70
svc_r	D7240	s	Remov 4 impact wisdom teeth (full bony)	39	12[d]	23	0.50
D7110	D7110	u	Extract 2 erupted mandibular teeth	15	6	15	0.38
svc_u	D7110	v	Extract 4 erupted mandibular teeth	21	6[d]	15	0.40
21193	21193	x	Bilat recnstr mnd ram, C/L ost wo bon gft	95	68	95	0.72
21194	21194	z	Bilat recnstr mnd ram, C/L ost w bon grft	158	76	158	0.48
21195	21195	ab	Bilat recnstr mnd ram, sag spl wo int fix	79	64	79	0.82
21470	21422	c	Tx mandib fx & tx pal, max fx, Lefort I	177	95	112	0.85
21196	21196	ad	Bilat recnstr mnd ram, sag spl w int fix	105	82	105	0.78
21198	21198	af	Bilat osteotomy, mandib, segmental	96	68	96	0.71
21206	21206	ah	Bilat osteotomy, maxilla, segmental	108	65	108	0.60
21240	21240	e	Bilat TMJ arthroplasty	137	94	137	0.69
21240	21060	g	Unil TMJ arthroplasty w TMJ meniscectomy	137	49	122	0.40

[a] Added intra-time is the intra-time of the multiple vignette minus the intra-time of the primary service (unless indicated).
[b] Intra-time of the secondary service is the time of the secondary service performed alone.
[c] Ratio = Added intra-service time of secondary service divided by intra-service time of secondary service performed alone.
[d] Computed as the average of each additional service.

Appendix E Table E.7 (continued)

Comparison of intra-service time of primary and secondary codes:
Neurosurgery

Primary CPT	Secondary CPT	Svc	Description	Intra-time primary	Added[a] intra-time secndry	Intra-[b] time secndry alone	Ratio[c]
61518	62180	l	Post fossa craniectomy w ventriculocistrn	299	75	161	0.46
61512	61512	n	Craniotomy, bilat or mult, supratent meng	241	134	241	0.56
61700	61700	p	Craniotomy, bilat or mult, clip aneurysm	280	144	280	0.51
61700	61711	r	Craniotomy, clip aneurysm w ECIC	280	160	256	0.63
svc_r	61340	t	Crantmy, clip anrysm w ECIC w subtem dcmp	440	29	95	0.30
61518	61711	u	Post fossa craniectomy w ECIC	299	158	256	0.62
61500	62141	x	Craniectomy w excis tumor w cranioplasty	145	80	147	0.55
64719	64721	aa	Carpal tunnel rpr w ulnar nerve decomprss	56	27	35	0.77
63075	22554	c	Anter cerv diskectomy w arthrodesis	142	50	142	0.35
63706	62223	ad	Rpr myelomeningocele w creation V-P shunt	204	100	102	0.98
63030	62284	ag	Myelogram foll by lumbar laminectomy	91	32	25	1.29
22554	20661	e	Arthrodesis w appl cranial halo	142	69	69	1.00
22625	63047	h	Lumbar lamin w arthrodesis	200	81	121	0.67
svc_h	22842	i	Lumbar lamin w arthrodesis w instrmntion	281	78	100	0.78

[a] Added intra-time is the intra-time of the multiple vignette minus the intra-time of the primary service (unless indicated).
[b] Intra-time of the secondary service is the time of the secondary service performed alone.
[c] Ratio = Added intra-service time of secondary service divided by intra-service time of secondary service performed alone.
[d] Computed as the average of each additional service.

Appendix E Table E.7 (continued)

Comparison of intra-service time of primary and secondary codes:
Obstetrics and gynecology

Primary CPT	Secondary CPT	Svc	Description	Intra-time primary	Added[a] intra-time secndry	Intra-[b] time secndry alone	Ratio[c]
58150	57270	k	Abdom hystrctmy w rpr enterocele	89	28	59	0.47
58150	57260	l	Abdom hystrctmy w comb anter colporrhaphy	89	52	61	0.86
58260	57260	n	Vag hystrctmy w comb anter colporrhaphy	70	40	61	0.65
57280	57260	p	Comb anter colporrhaphy w abd colpopexy	67	49	61	0.80
56303	56304	s	Surg laparscpy w fulgrtn w lysis adhesns	43	22	46	0.48
58760	56300	u	Diagnostic laparoscopy w fimbrioplasty	88	19	36	0.53
58140	58740	x	Myomectomy, sngl/mult w lysis adhesns	73	30	59	0.51
57282	57210	aa	Sacrosp lig fixtn, vag w colpoprnrrhphy	70	34	40	0.84
svcaa	57240	ab	Ant colporrhaphy w sacrosp lig fixtn, vag	104	22	45	0.50
56300	58120	d	D&C w diagnostic laparoscopy	36	10	13	0.74
56350	58120	e	D&C w diagnostic hysteroscopy	25	9	13	0.69
58150	57240	h	Abdom hystrctmy w anter colporrhaphy	89	38	45	0.84

[a] Added intra-time is the intra-time of the multiple vignette minus the intra-time of the primary service (unless indicated).
[b] Intra-time of the secondary service is the time of the secondary service performed alone.
[c] Ratio = Added intra-service time of secondary service divided by intra-service time of secondary service performed alone.
[d] Computed as the average of each additional service.

Appendix E Table E.7 (continued)

Comparison of intra-service time of primary and secondary codes:
Ophthalmology

Primary CPT	Secondary CPT	Svc	Description	Intra-time primary	Added[a] intra-time secndry	Intra-[b] time secndry alone	Ratio[c]
65755	67010	j	Corneal trnsplnt w anter vitrectomy	90	31	45	0.68
66985	67010	k	Anter vitrectomy w secondary IOL	40	33	45	0.72
svc_j	66985	l	Cornl trnspl w antr vitrctmy w scndry IOL	121	23	40	0.56
66170	66984	n	Cataract remov & IOL w trabeculectomy	51	47	54	0.87
67036	66984	o	Cataract remov & IOL w vitrectomy	76	57	54	1.05
66984	67311	q	Strabismus srg w cataract remov & IOL	54	35	35	0.99
67107	65280	u	Rpr corn lacer w rpr reatt by sclr bk	107	67	68	0.98
svc_u	66840	v	Rpr corn lac w rpr reat, scl bk w cat xtr	174	30	36	0.82
66180	66170	y	1st stg glauc drn impl w trabeculectomy	84	39	51	0.77
svc_y	67255	z	1st stg glauc drn impl w trab w scl reinf	123	47	89	0.53
15820	15822	ac	Blepharoplasty, right lowr & uppr eyelids	36	30	33	0.89
65730	66984	c	Corneal trnsplnt w cataract remov & IOL	85	39	54	0.73
15822	15822	ad	Bilat blepharoplasty, upper eyelids	33	44	33	1.33
67107	66761	af	Irid by las srg w rpr ret reatt, sclr bk	107	25	21	1.20
68700	67935	ai	Suture wound, eyelid w plast rpr canlcli	54	54	54	1.00
65730	66170	e	Corneal trnsplnt w trabeculectomy	85	39	51	0.77
65755	66985	i	Corneal trnsplnt w secondary IOL	90	31	40	0.78

[a] Added intra-time is the intra-time of the multiple vignette minus the intra-time of the primary service (unless indicated).
[b] Intra-time of the secondary service is the time of the secondary service performed alone.
[c] Ratio = Added intra-service time of secondary service divided by intra-service time of secondary service performed alone.
[d] Computed as the average of each additional service.

Appendix E Table E.7 (continued)

Comparison of intra-service time of primary and secondary codes:
Orthopedic surgery

Primary CPT	Secondary CPT	Svc	Description	Intra-time primary	Added[a] intra-time secndry	Intra-[b] time secndry alone	Ratio[c]
25605	25605	k	ORIF bilat Colles'fracture	35	53	35	1.52
64721	64721	m	Bilat carpal tunnel rpr	35	33	35	0.95
64721	26055	o	Carpal tunnel rpr w tndn shth incis fngr	35	22	25	0.87
27506	27506	q	ORIF R & L femoral shaft fractures	119	113	119	0.95
28292	28292	b	Bilat bunionectomy, K/M/M	56	49	56	0.88
27506	27814	t	ORIF femoral shaft fx & bimall ankle fx	119	72	87	0.82
svc_q	24515	u	ORIF R & L fem shaft fxs & humer shaft fx	232	70	106	0.66
25260	25260	z	Rpr 5 lacr flxr tendns wrist	50	17[d]	50	0.34
svc_z	64856	ab	Rpr 5 lacr flx tendns wrst w rpr medn nrv	116	89	157	0.57
64831	26350	ae	Rpr lacr flxr tendn finger w rpr digt nrv	74	33	53	0.62
svcae	26735	ag	Rpr flx tndn fngr w rpr dig nrv w ORIF fx	107	42	59	0.72
28292	28285	d	Bunionectomy, K/M/M w hammertoe, one toe	56	23	31	0.74
29888	29881	g	Arthr meniscectomy w ACL reconstruction	127	38	66	0.57
27447	27447	i	Bilat tot knee replacement	139	113	139	0.81

[a] Added intra-time is the intra-time of the multiple vignette minus the intra-time of the primary service (unless indicated).
[b] Intra-time of the secondary service is the time of the secondary service performed alone.
[c] Ratio = Added intra-service time of secondary service divided by intra-service time of secondary service performed alone.
[d] Computed as the average of each additional service.

Appendix E Table E.7 (continued)

Comparison of intra-service time of primary and secondary codes:
Otolaryngology

Primary CPT	Secondary CPT	Svc	Description	Intra-time primary	Added[a] intra-time secndry	Intra-[b] time secndry alone	Ratio[c]
31600	31525	j	Plan trach w diag larngscpy	25	22	19	1.15
svc_j	31622	l	Plan trach w diag larngscpy w diag bronch	47	24	39	0.61
31622	31525	m	Diag larngscpy w diag bronch	39	12	19	0.63
31360	38724	p	Tot laryngctmy w modif radic neck dissect	139	121	155	0.78
svc_j	31395	r	Plan trach w diag laryng w pharnglrngctmy	47	370	374	0.99
svc_r	15755	t	Pln trch w diag laryng w pharngl w flap	417	408	433	0.94
31200	31020	w	Anter ethmoidectomy w nas antral windows	48	18	25	0.73
31200	30115	y	Nas polypctmy w anter ethmoidectomy	48	26	44	0.60
41155	31600	aa	Plan trach w glossectomy & rad neck diss	326	42	25	1.68
svcaa	15732	ac	Pln trch w glssctmy & rad nck w musc flap	368	165	183	0.90
30520	30140	c	Septoplasty w submuc resect turbinate	58	24	28	0.85
42145	30520	ae	Palatphrngplsty w septoplasty	63	54	58	0.93
svcae	30140	af	Palatphrng w septplsty w resect nas turb	117	25	28	0.88
69436	69436	e	Bilat tympanostomy	9	6	9	0.71
42820	svc_e	g	T & A w bilat tympanostomy	29	9[d]	15	0.60

[a] Added intra-time is the intra-time of the multiple vignette minus the intra-time of the primary service (unless indicated).
[b] Intra-time of the secondary service is the time of the secondary service performed alone.
[c] Ratio = Added intra-service time of secondary service divided by intra-service time of secondary service performed alone.
[d] Computed as the average of each additional service.

Appendix E Table E.7 (continued)

Comparison of intra-service time of primary and secondary codes:
Plastic surgery

Primary CPT	Secondary CPT	Svc	Description	Intra-time primary	Added[a] intra-time secndry	Intra-[b] time secndry alone	Ratio[c]
15820	15820	z1	Bilat blephoroplasty, low lid	36	27	36	0.75
15821	15821	z2	Bilat blephoroplasty, low lid w fat pad	46	31	46	0.67
15822	15822	z3	Bilat blephoroplasty, upp lid	33	26	33	0.79
19328	19328	z4	Bilat remov intact mammary implant	38	27	38	0.71
19330	19330	z5	Bilat remov mammary implant mat	52	53	52	1.02

[a] Added intra-time is the intra-time of the multiple vignette minus the intra-time of the primary service (unless indicated).
[b] Intra-time of the secondary service is the time of the secondary service performed alone.
[c] Ratio = Added intra-service time of secondary service divided by intra-service time of secondary service performed alone.
[d] Computed as the average of each additional service.

Appendix E Table E.7 (continued)

Comparison of intra-service time of primary and secondary codes:
Cardiothoracic surgery

Primary CPT	Secondary CPT	Svc	Description	Intra-time primary	Added[a] intra-time secndry	Intra-[b] time secndry alone	Ratio[c]
39400	31622	k	Diagn bronch w mediastinoscopy	46	36	39	0.93
32100	31622	m	Diagn bronch w major thoracotomy	92	33	39	0.84
32100	39400	n	Mediastinoscopy w major thoracotomy	92	53	46	1.14
32480	31622	p	Diagn bronchoscopy w tot lobectomy	131	40	39	1.03
32480	39400	q	Mediastinoscopy w tot lobectomy	131	53	46	1.15
32440	31622	s	Diagn w tot pneumonectomy	142	35	39	0.91
33512	33212	u	CABGX3 w insert/repl pcmkr or AICD	200	61	46	1.33
33512	35301	w	Carotid endarterectomy w CABGX3	200	115	120	0.96
35556	35355	z	Iliofemoral endartrctmy w fem-pop bypass	156	132	174	0.76
33405	33430	c	AVR w a MVR	186	92	201	0.46
33405	33512	e	AVR w CABGX3	186	106	200	0.53
33430	33512	f	MVR w CABGX3	201	101	200	0.51
33512	33425	h	Mitral valve rpr w CABGX3	200	117	217	0.54

[a] Added intra-time is the intra-time of the multiple vignette minus the intra-time of the primary service (unless indicated).
[b] Intra-time of the secondary service is the time of the secondary service performed alone.
[c] Ratio = Added intra-service time of secondary service divided by intra-service time of secondary service performed alone.
[d] Computed as the average of each additional service.

Appendix E Table E.7 (continued)

Comparison of intra-service time of primary and secondary codes:
Urology

Primary CPT	Secondary CPT	Svc	Description	Intra-time primary	Added[a] intra-time secndry	Intra-[b] time secndry alone	Ratio[c]
54640	54640	j	Bilat orchiopexy	76	57	76	0.75
50590	52332	m	Lithotripsy w cystourethroscopy	66	36	32	1.14
51596	43830	p	Complete cystectomy w temp gastrostomy	445	37	51	0.73
50080	50040	s	Nephrstlthtmy/pyelstlthtmy w nephrostomy	117	45	96	0.47
54520	54520	b	Simple bilat orchiectomy	29	27	29	0.94
51845	51040	v	Cystostomy w an abdom-vag vesic neck susp	66	19	33	0.56
54530	54660	y	Radical orchiectomy w insert test prosth	58	20	40	0.49
52000	51726	ab	Cystourethroscopy w complex cystometrogrm	14	32	29	1.10
51741	51726	af	Complex cystometrgrm w complex uroflwmtry	28	24	29	0.83
51795	51772	ag	UPP w AP	35	19	26	0.72
svcag	51726	ah	Complex cystometrogrm w UPP w AP	54	16	29	0.56
svcaf	51795	ai	Cmplx cystmtrgrm w a cmplx uroflowm w AP	52	21	35	0.60
52601	svc_b	d	TURP w simple bilat orchiectomy	62	48	56	0.85
52601	49505	g	TURP w inguinal hernia rpr, over age 5	62	58	48	1.20
52601	52317	h	TURP w simple litholapaxy	62	43	51	0.85

[a] Added intra-time is the intra-time of the multiple vignette minus the intra-time of the primary service (unless indicated).
[b] Intra-time of the secondary service is the time of the secondary service performed alone.
[c] Ratio = Added intra-service time of secondary service divided by intra-service time of secondary service performed alone.
[d] Computed as the average of each additional service.

Appendix E Table E.8

Comparison of intra-service work[a] of primary and secondary codes:
General surgery

Primary CPT	Secondary CPT	Svc	Description	Intra-work primary	Added[b] intra-sork secndry	Intra-[c] work secndry alone	Ratio[d]
44140	44005	o	Ptl colctmy w extensive lysis of adhesns	800	419	615	0.68
44140	47100	p	Ptl colctmy w wedge liver bx	800	227	300	0.76
47120	44140	q	Ptl colctmy w resection liver	1160	590	800	0.74
44140	44950	r	Ptl colctmy w appendectomy.	800	155	275	0.56
49500	49500	b	Bilat inguinal hernia rpr child	280	151	280	0.54
44800	44950	t	Appendctmy w excis Meckel's divrticulum	490	138	275	0.50
47605	49560	w	Cholecyst w rpr ventral hernia	600	330	500	0.66
43324	43830	z	Nissen fundoplication w temp gastrostomy	795	199	225	0.88
43635	38100	ac	Hemigstrctmy w vagot w total splenectomy	1060	318	630	0.50
38100	49000	ae	Expl lap, trauma w tot splen	630	342	490	0.70
svcae	44140	af	Expl lap, trauma w tot splen w pt colctmy	972	482	800	0.60
49500	54152	d	Hernia rpr for child w circumcision	280	87	135	0.64
38745	19120	g	Excis breast mass w axillary dissection	385	157	170	0.92
19240	19120	i	Excis breast mass w mod rad mastectomy	730	114	170	0.67

[a] Intra-work on common scale.
[b] Added intra-work is the intra-work of the multiple vignette minus the intra-work of the primary service (unless indicated).
[c] Intra-work of the secondary service is the work of the secondary service performed alone.
[d] Ratio = Added intra-service work of secondary service divided by intra-service work of secondary service performed alone.
[e] Computed as the average of each additional service.

Appendix E Table E.8 (continued)

Comparison of intra-service work[a] of primary and secondary codes:
Podiatry

Primary CPT	Secondary CPT	Svc	Description	Intra-work primary	Added[b] intra-work secndry	Intra-[c] work secndry alone	Ratio[d]
28270	28270	b	Capsul metars jnt fr contrctr, two jnt	101	55	101	0.54
11750	11750	d	Excis nl & nl mtrx, part/comp, two nail	100	66	100	0.66
11750[x10]		e	Excis nl & nl mtrx, part/comp, ten nails	100	44[e]	100	0.44
28285	28285	g	Hammertoe oper on two toes, same ft	187	125	187	0.67
28285	28285	h	Hammertoe oper on two toes, one each ft	187	148	187	0.79
28285	11750	i	Hammertoe oper on one toe and excis nl	187	79	100	0.79
28285	28270	j	Hammertoe oper one toe and sngl capsltmy	187	83	101	0.82
29292	29292	l	Bilateral bunionectomy	271	234	271	0.86
29292	28285	m	Bunionectomy, sngl and hammertoe, one toe	271	159	187	0.85
28160	28160	p	Hemiphalangectomy, two toes	181	119	181	0.66
28080	28080	r	Excis bilat interdig Morton's neuroma	198	191	198	0.96
28080[x2]	28140	s	Excis bilat neurma and prtl metatrsctomy	389	114	210	0.54
28080	28160	t	Excis sngl nrma & hemiphlngctomy, sngl toe	198	169	181	0.93
28285	28080	u	Hmrtoe oper 1 toe and excis of sngl nrma	187	193	198	0.97
11422	11422	w	Excis two ben les (incl simple closure)	94	77	94	0.82

[a] Intra-work on common scale.
[b] Added intra-work is the intra-work of the multiple vignette minus the intra-work of the primary service (unless indicated).
[c] Intra-work of the secondary service is the work of the secondary service performed alone.
[d] Ratio = Added intra-service work of secondary service divided by intra-service work of secondary service performed alone.
[e] Computed as the average of each additional service.

Appendix E Table E.8 (continued)

Comparison of intra-service work[a] of primary and secondary codes:
Oral and maxillofacial surgery

Primary CPT	Secondary CPT	Svc	Description	Intra-work primary	Added[b] intra-work secndry	Intra-[c] work secndry alone	Ratio[d]
21147	21121	j	Lefort I osteotomy w genioplasty	1685	378	415	0.91
21390	21360	m	Tx malar fx & tx orbital floor blowout fx	760	405	723	0.56
21247	21255	p	Reconstruct mandib condyle & zygom arch	1260	689	1188	0.58
D7240	D7240	r	Remov 2 impact wisdom teeth (full bony)	146	90	146	0.61
svc_r	D7240	s	Remov 4 impact wisdom teeth (full bony)	236	77[e]	146	0.52
D7110	D7110	u	Extract 2 erupted mandibular teeth	60	30	60	0.50
svc_u	D7110	v	Extract 4 erupted mandibular teeth	90	28[e]	60	0.46
21193	21193	x	Bilat recnstr mnd ram, C/L ost wo bon gft	789	471	789	0.60
21194	21194	z	Bilat recnstr mnd ram, C/L ost w bon grft	1040	551	1040	0.53
21195	21195	ab	Bilat recnstr mnd ram, sag spl wo int fix	830	466	830	0.56
21470	21422	c	Tx mandib fx & tx pal, max fx, Lefort I	1140	784	830	0.94
21196	21196	ad	Bilat recnstr mnd ram, sag spl w int fix	1010	520	1010	0.51
21198	21198	af	Bilat osteotomy, mandib, segmental	722	379	722	0.53
21206	21206	ah	Bilat osteotomy, maxilla, segmental	744	427	744	0.57
21240	21240	e	Bilat TMJ arthroplasty	810	603	810	0.74
21240	21060	g	Unil TMJ arthroplasty w TMJ meniscectomy	810	421	775	0.54

[a] Intra-work on common scale.
[b] Added intra-work is the intra-work of the multiple vignette minus the intra-work of the primary service (unless indicated).
[c] Intra-work of the secondary service is the work of the secondary service performed alone.
[d] Ratio = Added intra-service work of secondary service divided by intra-service work of secondary service performed alone.
[e] Computed as the average of each additional service.

Appendix E Table E.8 (continued)

Comparison of intra-service work[a] of primary and secondary codes:
Neurosurgery

Primary CPT	Secondary CPT	Svc	Description	Intra-work primary	Added[b] intra-work secndry	Intra-[c] work secndry alone	Ratio[d]
61518	62180	l	Post fossa craniectomy w ventriculocistrn	2235	501	850	0.59
61512	61512	n	Craniotomy, bilat or mult, supratent meng	1665	1055	1665	0.63
61700	61700	p	Craniotomy, bilat or mult, clip aneurysm	2430	1285	2430	0.53
61700	61711	r	Craniotomy, clip aneurysm w ECIC	2430	1497	2325	0.64
svc_r	61340	t	Crantmy, clip anrysm w ECIC w subtem dcmp	3927	271	745	0.36
61518	61711	u	Post fossa craniectomy w ECIC	2235	1655	2325	0.71
61500	62141	x	Craniectomy w excis tumor w cranioplasty	1230	555	720	0.77
64719	64721	aa	Carpal tunnel rpr w ulnar nerve decomprss	230	116	165	0.70
63075	22554	c	Anter cerv diskectomy w arthrodesis	1000	554	1050	0.53
63706	62223	ad	Rpr myelomeningocele w creation V-P shunt	1265	525	650	0.81
63030	62284	ag	Myelogram foll by lumbar laminectomy	635	125	100	1.25
22554	20661	e	Arthrodesis w appl cranial halo	1050	268	235	1.14
22625	63047	h	Lumbar lamin w arthrodesis	1350	463	800	0.58
svc_h	22842	i	Lumbar lamin w arthrodesis w instrmntion	1812	551	860	0.64

[a] Intra-work on common scale.
[b] Added intra-work is the intra-work of the multiple vignette minus the intra-work of the primary service (unless indicated).
[c] Intra-work of the secondary service is the work of the secondary service performed alone.
[d] Ratio = Added intra-service work of secondary service divided by intra-service work of secondary service performed alone.
[e] Computed as the average of each additional service.

Appendix E Table E.8 (continued)

Comparison of intra-service work[a] of primary and secondary codes:
Obstetrics and gynecology

Primary CPT	Secondary CPT	Svc	Description	Intra-work primary	Added[b] intra-work secndry	Intra-[c] work secndry alone	Ratio[d]
58150	57270	k	Abdom hystrctmy w rpr enterocele	600	211	330	0.64
58150	57260	l	Abdom hystrctmy w comb anter colporrhaphy	600	269	280	0.96
58260	57260	n	Vag hystrctmy w comb anter colporrhaphy	500	266	280	0.95
57280	57260	p	Comb anter colporrhaphy w abd colpopexy	370	272	280	0.97
56303	56304	s	Surg laparscpy w fulgrtn w lysis adhesns	305	170	270	0.63
58760	56300	u	Diagnostic laparoscopy w fimbrioplasty	330	188	235	0.80
58140	58740	x	Myomectomy, sngl/mult w lysis adhesns	370	124	210	0.59
57282	57210	aa	Sacrosp lig fixtn, vag w colpoprnrrhphy	365	150	190	0.79
svcaa	57240	ab	Ant colporrhaphy w sacrosp lig fixtn, vag	515	110	195	0.56
56300	58120	d	D&C w diagnostic laparoscopy	235	53	80	0.66
56350	58120	e	D&C w diagnostic hysteroscopy	120	78	80	0.97
58150	57240	h	Abdom hystrctmy w anter colporrhaphy	600	177	195	0.91

[a] Intra-work on common scale.
[b] Added intra-work is the intra-work of the multiple vignette minus the intra-work of the primary service (unless indicated).
[c] Intra-work of the secondary service is the work of the secondary service performed alone.
[d] Ratio = Added intra-service work of secondary service divided by intra-service work of secondary service performed alone.
[e] Computed as the average of each additional service.

Appendix E Table E.8 (continued)

Comparison of intra-service work[a] of primary and secondary codes:
Ophthalmology

Primary CPT	Secondary CPT	Svc	Description	Intra-work primary	Added[b] intra-work secndry	Intra-[c] work secndry alone	Ratio[d]
65755	67010	j	Corneal trnsplnt w anter vitrectomy	760	348	420	0.83
66985	67010	k	Anter vitrectomy w secondary IOL	435	356	420	0.85
svc_j	66985	l	Cornl trnspl w antr vitrctmy w scndry IOL	1108	298	435	0.68
66170	66984	n	Cataract remov & IOL w trabeculectomy	550	584	640	0.91
67036	66984	o	Cataract remov & IOL w vitrectomy	665	533	640	0.83
66984	67311	q	Strabismus srg w cataract remov & IOL	640	214	260	0.82
67107	65280	u	Rpr corn lacer w rpr reatt by sclr bk	900	380	380	1.00
svc_u	66840	v	Rpr corn lac w rpr reat, scl bk w cat xtr	1280	388	445	0.87
66180	66170	y	1st stg glauc drn impl w trabeculectomy	780	377	550	0.69
svc_y	67255	z	1st stg glauc drn impl w trab w scl reinf	1157	429	640	0.67
15820	15822	ac	Blepharoplasty, right lowr & uppr eyelids	235	193	190	1.01
65730	66984	c	Corneal trnsplnt w cataract remov & IOL	815	553	640	0.86
15822	15822	ad	Bilat blepharoplasty, upper eyelids	190	222	190	1.17
67107	66761	af	Irid by las srg w rpr ret reatt, sclr bk	900	200	195	1.03
68700	67935	ai	Suture wound, eyelid w plast rpr canlcli	270	253	265	0.96
65730	66170	e	Corneal trnsplnt w trabeculectomy	815	510	550	0.93
65755	66985	i	Corneal trnsplnt w secondary IOL	760	406	435	0.93

[a] Intra-work on common scale.
[b] Added intra-work is the intra-work of the multiple vignette minus the intra-work of the primary service (unless indicated).
[c] Intra-work of the secondary service is the work of the secondary service performed alone.
[d] Ratio = Added intra-service work of secondary service divided by intra-service work of secondary service performed alone.
[e] Computed as the average of each additional service.

Appendix E Table E.8 (continued)

Comparison of intra-service work[a] of primary and secondary codes:
Orthopedic surgery

Primary CPT	Secondary CPT	Svc	Description	Intra-work primary	Added[b] intra-work secndry	Intra-[c] work secndry alone	Ratio[d]
25605	25605	k	ORIF bilat Colles'fracture	185	190	185	1.03
64721	64721	m	Bilat carpal tunnel rpr	165	137	165	0.83
64721	26055	o	Carpal tunnel rpr w tndn shth incis fngr	165	63	90	0.69
27506	27506	q	ORIF R & L femoral shaft fractures	830	716	830	0.86
28292	28292	b	Bilat bunionectomy, K/M/M	292	216	292	0.74
27506	27814	t	ORIF femoral shaft fx & bimall ankle fx	830	420	505	0.83
svc_q	24515	u	ORIF R & L fem shaft fxs & humer shaft fx	1545	503	665	0.76
25260	25260	z	Rpr 5 lacr flxr tendns wrist	370	125[e]	370	0.34
svc_z	64856	ab	Rpr 5 lacr flx tendns wrst w rpr medn nrv	871	555	775	0.72
64831	26350	ae	Rpr lacr flxr tendn finger w rpr digt nrv	500	230	295	0.78
svcae	26735	ag	Rpr flx tndn fngr w rpr dig nrv w ORIF fx	730	194	265	0.73
28292	28285	d	Bunionectomy, K/M/M w hammertoe, one toe	292	104	120	0.86
29888	29881	g	Arthr meniscectomy w ACL reconstruction	865	263	465	0.56
27447	27447	i	Bilat tot knee replacement	1140	887	1140	0.78

[a] Intra-work on common scale.
[b] Added intra-work is the intra-work of the multiple vignette minus the intra-work of the primary service (unless indicated).
[c] Intra-work of the secondary service is the work of the secondary service performed alone.
[d] Ratio = Added intra-service work of secondary service divided by intra-service work of secondary service performed alone.
[e] Computed as the average of each additional service.

Appendix E Table E.8 (continued)

Comparison of intra-service work[a] of primary and secondary codes:
Otolaryngology

Primary CPT	Secondary CPT	Svc	Description	Intra-work primary	Added[b] intra-work secndry	Intra-[c] work secndry alone	Ratio[d]
31600	31525	j	Plan trach w diag larngscpy	205	141	165	0.86
svc_j	31622	l	Plan trach w diag larngscpy w diag bronch	346	139	190	0.73
31622	31525	m	Diag larngscpy w diag bronch	190	121	165	0.73
31360	38724	p	Tot laryngctmy w modif radic neck dissect	800	597	735	0.81
svc_j	31395	r	Plan trach w diag laryng w pharnglrngctmy	346	1860	1860	1.00
svc_r	15755	t	Pln trch w diag laryng w pharngl w flap	2206	2037	2130	0.96
31200	31020	w	Anter ethmoidectomy w nas antral windows	280	95	120	0.79
31200	30115	y	Nas polypctmy w anter ethmoidectomy	280	171	230	0.74
41155	31600	aa	Plan trach w glossectomy & rad neck diss	1360	192	205	0.94
svcaa	15732	ac	Pln trch w glssctmy & rad nck w musc flap	1552	725	755	0.96
30520	30140	c	Septoplasty w submuc resect turbinate	320	121	140	0.87
42145	30520	ae	Palatphrngplsty w septoplasty	350	294	320	0.92
svcae	30140	af	Palatphrng w septplsty w resect nas turb	644	122	140	0.87
69436	69436	e	Bilat tympanostomy	85	63	85	0.74
42820	svc_e	g	T & A w bilat tympanostomy	150	62[e]	85	0.72

[a] Intra-work on common scale.
[b] Added intra-work is the intra-work of the multiple vignette minus the intra-work of the primary service (unless indicated).
[c] Intra-work of the secondary service is the work of the secondary service performed alone.
[d] Ratio = Added intra-service work of secondary service divided by intra-service work of secondary service performed alone.
[e] Computed as the average of each additional service.

Appendix E Table E.8 (continued)

Comparison of intra-service work[a] of primary and secondary codes:
Plastic surgery

Primary CPT	Secondary CPT	Svc	Description	Intra-work primary	Added[b] intra-work secndry	Intra-[c] work secndry alone	Ratio[d]
15820	15820	z1	Bilat blephoroplasty, low lid	234	139	234	0.59
15821	15821	z2	Bilat blephoroplasty, low lid w fat pad	274	160	274	0.58
15822	15822	z3	Bilat blephoroplasty, upp lid	188	141	188	0.75
19328	19328	z4	Bilat remov intact mammary implant	247	129	247	0.52
19330	19330	z5	Bilat remov mammary implant mat	377	154	377	0.41

[a] Intra-work on common scale.
[b] Added intra-work is the intra-work of the multiple vignette minus the intra-work of the primary service (unless indicated).
[c] Intra-work of the secondary service is the work of the secondary service performed alone.
[d] Ratio = Added intra-service work of secondary service divided by intra-service work of secondary service performed alone.
[e] Computed as the average of each additional service.

Appendix E Table E.8 (continued)

Comparison of intra-service work[a] of primary and secondary codes:
Cardiothoracic surgery

Primary CPT	Secondary CPT	Svc	Description	Intra-work primary	Added[b] intra-work secndry	Intra-[c] work secndry alone	Ratio[d]
39400	31622	k	Diagn bronch w mediastinoscopy	265	127	190	0.67
32100	31622	m	Diagn bronch w major thoracotomy	395	143	190	0.75
32100	39400	n	Mediastinoscopy w major thoracotomy	395	232	265	0.88
32480	31622	p	Diagn bronchoscopy w tot lobectomy	945	125	190	0.66
32480	39400	q	Mediastinoscopy w tot lobectomy	945	237	265	0.89
32440	31622	s	Diagn w tot pneumonectomy	1050	145	190	0.76
33512	33212	u	CABGX3 w insert/repl pcmkr or AICD	1580	222	230	0.97
33512	35301	w	Carotid endarterectomy w CABGX3	1580	821	900	0.91
35556	35355	z	Iliofemoral endartrctmy w fem-pop bypass	980	684	930	0.73
33405	33430	c	AVR w a MVR	1600	1089	1650	0.66
33405	33512	e	AVR w CABGX3	1600	897	1580	0.57
33430	33512	f	MVR w CABGX3	1650	967	1580	0.61
33512	33425	h	Mitral valve rpr w CABGX3	1580	1183	1655	0.71

[a] Intra-work on common scale.
[b] Added intra-work is the intra-work of the multiple vignette minus the intra-work of the primary service (unless indicated).
[c] Intra-work of the secondary service is the work of the secondary service performed alone.
[d] Ratio = Added intra-service work of secondary service divided by intra-service work of secondary service performed alone.
[e] Computed as the average of each additional service.

Appendix E Table E.8 (continued)

Comparison of intra-service work[a] of primary and secondary codes:
Urology

Primary CPT	Secondary CPT	Svc	Description	Intra-work primary	Added[b] intra-work secndry	Intra-[c] work secndry alone	Ratio[d]
54640	54640	j	Bilat orchiopexy	430	330	430	0.77
50590	52332	m	Lithotripsy w cystourethroscopy	685	184	170	1.08
51596	43830	p	Complete cystectomy w temp gastrostomy	2300	170	225	0.75
50080	50040	s	Nephrstlthtmy/pyelstlthtmy w nephrostomy	880	409	830	0.49
54520	54520	b	Simple bilat orchiectomy	290	135	290	0.47
51845	51040	v	Cystostomy w an abdom-vag vesic neck susp	600	171	250	0.68
54530	54660	y	Radical orchiectomy w insert test prosth	450	195	295	0.66
52000	51726	ab	Cystourethroscopy w complex cystometrogrm	85	77	85	0.90
51741	51726	af	Complex cystometrgrm w complex uroflwmtry	105	68	85	0.80
51795	51772	ag	UPP w AP	140	75	110	0.68
svcag	51726	ah	Complex cystometrogrm w UPP w AP	215	47	85	0.55
svcaf	51795	ai	Cmplx cystmtrgrm w a cmplx uroflowm w AP	173	89	140	0.63
52601	svc_b	d	TURP w simple bilat orchiectomy	690	337	425	0.79
52601	49505	g	TURP w inguinal hernia rpr, over age 5	690	291	295	0.99
52601	52317	h	TURP w simple litholapaxy	690	396	490	0.81

[a] Intra-work on common scale.
[b] Added intra-work is the intra-work of the multiple vignette minus the intra-work of the primary service (unless indicated).
[c] Intra-work of the secondary service is the work of the secondary service performed alone.
[d] Ratio = Added intra-service work of secondary service divided by intra-service work of secondary service performed alone.
[e] Computed as the average of each additional service.

Appendix E Table E.9

Comparison of pre-/post-service work[a] of primary and secondary codes:
General surgery

Primary CPT	Secondary CPT	Svc	Description	Pre/Post work primary	Added[b] pre/post work secndry	Pre/Post[c] work secndry alone	Ratio[d]
44140	44005	o	Ptl colctmy w extensive lysis of adhesns	895	77	628	0.12
44140	47100	p	Ptl colctmy w wedge liver bx	895	78	397	0.20
47120	44140	q	Ptl colctmy w resection liver	825	76	895	0.08
44140	44950	r	Ptl colctmy w appendectomy.	895	63	325	0.19
49500	49500	b	Bilat inguinal hernia rpr child	220	26	220	0.12
44800	44950	t	Appendctmy w excis Meckel's divrticulum	544	16	325	0.05
47605	49560	w	Cholecyst w rpr ventral hernia	540	73	442	0.17
43324	43830	z	Nissen fundoplication w temp gastrostomy	752	42	417	0.10
43635	38100	ac	Hemigstrctmy w vagot w total splenectomy	840	60	560	0.11
38100	49000	ae	Expl lap, trauma w tot splen	560	178	401	0.44
svcae	44140	af	Expl lap, trauma w tot splen w pt colctmy	738	157	895	0.18
49500	54152	d	Hernia rpr for child w circumcision	220	37	85	0.43
38745	19120	g	Excis breast mass w axillary dissection	451	54	310	0.18
19240	19120	i	Excis breast mass w mod rad mastectomy	730	55	310	0.18

[a] Pre/post work on the common scale.
[b] Added pre/post work is the pre/post work of the multiple vignette minus the pre/post work of the primary service (unless indicated).
[c] Pre/post work of the secondary service is the work of the secondary service performed alone.
[d] Ratio = Added pre/post work of secondary service divided by pre/post work of secondary service performed alone.
[e] Computed as the average of each additional service.

Appendix E Table E.9 (continued)

Comparison of pre-/post-service work[a] of primary and secondary codes:
Podiatry

Primary CPT	Secondary CPT	Svc	Description	Pre/Post work primary	Added[b] pre/post work secndry	Pre/Post[c] work secndry alone	Ratio[d]
28270	28270	b	Capsul metars jnt fr contrctr, two jnt	270	19	270	.07
11750	11750	d	Excis nl & nl mtrx, part/comp, two nail	143	15	143	.10
11750[x10]		e	Excis nl & nl mtrx, part/comp, ten nails	143	6[e]	143	.04
28285	28285	g	Hammertoe oper on two toes, same ft	346	31	346	.09
28285	28285	h	Hammertoe oper on two toes, one each ft	346	68	346	.20
28285	11750	i	Hammertoe oper on one toe and excis nl	346	56	143	.39
28285	28270	j	Hammertoe oper one toe and sngl capsltmy	346	36	270	.13
29292	29292	l	Bilateral bunionectomy	486	84	486	.17
29292	28285	m	Bunionectomy, sngl and hammertoe, one toe	486	30	346	.09
28160	28160	p	Hemiphalangectomy, two toes	353	25	353	.07
28080	28080	r	Excis bilat interdig Morton's neuroma	354	60	354	.17
28080[x2]	28140	s	Excis bilat neurma and prtl metatrsctomy	414	43	351	.12
28080	28160	t	Excis sngl nrma & hemiphlngctomy, sngl toe	354	61	353	.17
28285	28080	u	Hmrtoe oper 1 toe and excis of sngl nrma	346	87	354	.25
11422	11422	w	Excis two ben les (incl simple closure)	125	7	125	.06

[a] Pre/post work on the common scale.
[b] Added pre/post work is the pre/post work of the multiple vignette minus the pre/post work of the primary service (unless indicated).
[c] Pre/post work of the secondary service is the work of the secondary service performed alone.
[d] Ratio = Added pre/post work of secondary service divided by pre/post work of secondary service performed alone.
[e] Computed as the average of each additional service.

Appendix E Table E.9 (continued)

Comparison of pre-/post-service work[a] of primary and secondary codes:
Oral and maxillofacial surgery

Primary CPT	Secondary CPT	Svc	Description	Pre/Post work primary	Added[b] pre/post work secndry	Pre/Post[c] work secndry alone	Ratio[d]
21147	21121	j	Lefort I osteotomy w genioplasty	912	285	331	0.86
21390	21360	m	Tx malar fx & tx orbital floor blowout fx	572	68	516	0.13
21247	21255	p	Reconstruct mandib condyle & zygom arch	765	104	779	0.13
D7240	D7240	r	Remov 2 impact wisdom teeth (full bony)	138	3	138	0.02
svc_r	D7240	s	Remov 4 impact wisdom teeth (full bony)	141	7[e]	138	0.05
D7110	D7110	u	Extract 2 erupted mandibular teeth	123	8	123	0.06
svc_u	D7110	v	Extract 4 erupted mandibular teeth	131	4[e]	123	0.03
21193	21193	x	Bilat recnstr mnd ram, C/L ost wo bon gft	637	31	637	0.05
21194	21194	z	Bilat recnstr mnd ram, C/L ost w bon grft	701	30	701	0.04
21195	21195	ab	Bilat recnstr mnd ram, sag spl wo int fix	1149	25	1149	0.02
21470	21422	c	Tx mandib fx & tx pal, max fx, Lefort I	270	153	639	0.24
21196	21196	ad	Bilat recnstr mnd ram, sag spl w int fix	1232	51	1232	0.04
21198	21198	af	Bilat osteotomy, mandib, segmental	574	43	574	0.08
21206	21206	ah	Bilat osteotomy, maxilla, segmental	556	40	556	0.07
21240	21240	e	Bilat TMJ arthroplasty	490	93	490	0.19
21240	21060	g	Unil TMJ arthroplasty w TMJ meniscectomy	490	94	571	0.17

[a] Pre/post work on the common scale.
[b] Added pre/post work is the pre/post work of the multiple vignette minus the pre/post work of the primary service (unless indicated).
[c] Pre/post work of the secondary service is the work of the secondary service performed alone.
[d] Ratio = Added pre/post work of secondary service divided by pre/post work of secondary service performed alone.
[e] Computed as the average of each additional service.

Appendix E Table E.9 (continued)

Comparison of pre-/post-service work[a] of primary and secondary codes:
Neurosurgery

Primary CPT	Secondary CPT	Svc	Description	Pre/Post work primary	Added[b] pre/post work secndry	Pre/Post[c] work secndry alone	Ratio[d]
61518	62180	l	Post fossa craniectomy w ventriculocistrn	970	88	415	0.21
61512	61512	n	Craniotomy, bilat or mult, supratent meng	742	120	742	0.16
61700	61700	p	Craniotomy, bilat or mult, clip aneurysm	1040	107	1040	0.10
61700	61711	r	Craniotomy, clip aneurysm w ECIC	1040	148	791	0.19
svc_r	61340	t	Crantmy, clip anrysm w ECIC w subtem dcmp	1188	145	405	0.36
61518	61711	u	Post fossa craniectomy w ECIC	970	182	791	0.23
61500	62141	x	Craniectomy w excis tumor w cranioplasty	477	36	522	0.07
64719	64721	aa	Carpal tunnel rpr w ulnar nerve decomprss	195	27	225	0.12
63075	22554	c	Anter cerv diskectomy w arthrodesis	960	51	750	0.07
63706	62223	ad	Rpr myelomeningocele w creation V-P shunt	501	100	574	0.17
63030	62284	ag	Myelogram foll by lumbar laminectomy	565	58	55	1.06
22554	20661	e	Arthrodesis w appl cranial halo	750	164	390	0.42
22625	63047	h	Lumbar lamin w arthrodesis	677	136	482	0.28
svc_h	22842	i	Lumbar lamin w arthrodesis w instrmntion	814	56	571	0.10

[a] Pre/post work on the common scale.
[b] Added pre/post work is the pre/post work of the multiple vignette minus the pre/post work of the primary service (unless indicated).
[c] Pre/post work of the secondary service is the work of the secondary service performed alone.
[d] Ratio = Added pre/post work of secondary service divided by pre/post work of secondary service performed alone.
[e] Computed as the average of each additional service.

Appendix E Table E.9 (continued)

Comparison of pre-/post-service work[a] of primary and secondary codes:
Obstetrics and gynecology

Primary CPT	Secondary CPT	Svc	Description	Pre/Post work primary	Added[b] pre/post work secndry	Pre/Post[c] work secndry alone	Ratio[d]
58150	57270	k	Abdom hystrctmy w rpr enterocele	690	39	417	0.09
58150	57260	l	Abdom hystrctmy w comb anter colporrhaphy	690	49	475	0.10
58260	57260	n	Vag hystrctmy w comb anter colporrhaphy	630	53	475	0.11
57280	57260	p	Comb anter colporrhaphy w abd colpopexy	460	66	475	0.14
56303	56304	s	Surg laparscpy w fulgrtn w lysis adhesns	260	47	164	0.28
58760	56300	u	Diagnostic laparoscopy w fimbrioplasty	437	12	120	0.10
58140	58740	x	Myomectomy, sngl/mult w lysis adhesns	400	22	313	0.07
57282	57210	aa	Sacrosp lig fixtn, vag w colpoprnrrhphy	453	42	277	0.15
svcaa	57240	ab	Ant colporrhaphy w sacrosp lig fixtn, vag	495	15	340	0.05
56300	58120	d	D&C w diagnostic laparoscopy	120	35	158	0.22
56350	58120	e	D&C w diagnostic hysteroscopy	117	30	158	0.19
58150	57240	h	Abdom hystrctmy w anter colporrhaphy	690	39	340	0.11

[a] Pre/post work on the common scale.
[b] Added pre/post work is the pre/post work of the multiple vignette minus the pre/post work of the primary service (unless indicated).
[c] Pre/post work of the secondary service is the work of the secondary service performed alone.
[d] Ratio = Added pre/post work of secondary service divided by pre/post work of secondary service performed alone.
[e] Computed as the average of each additional service.

Appendix E Table E.9 (continued)

Comparison of pre-/post-service work[a] of primary and secondary codes:
Ophthalmology

Primary CPT	Secondary CPT	Svc	Description	Pre/Post work primary	Added[b] pre/post work secndry	Pre/Post[c] work secndry alone	Ratio[d]
65755	67010	j	Corneal trnsplnt w anter vitrectomy	429	44	240	0.19
66985	67010	k	Anter vitrectomy w secondary IOL	350	110	240	0.46
svc_j	66985	l	Cornl trnspl w antr vitrctmy w scndry IOL	474	20	350	0.06
66170	66984	n	Cataract remov & IOL w trabeculectomy	573	103	340	0.30
67036	66984	o	Cataract remov & IOL w vitrectomy	460	72	340	0.21
66984	67311	q	Strabismus srg w cataract remov & IOL	340	38	280	0.14
67107	65280	u	Rpr corn lacer w rpr reatt by sclr bk	490	99	306	0.32
svc_u	66840	v	Rpr corn lac w rpr reat, scl bk w cat xtr	589	23	276	0.08
66180	66170	y	1st stg glauc drn impl w trabeculectomy	360	101	573	0.18
svc_y	67255	z	1st stg glauc drn impl w trab w scl reinf	461	14	248	0.06
15820	15822	ac	Blepharoplasty, right lowr & uppr eyelids	263	15	256	0.06
65730	66984	c	Corneal trnsplnt w cataract remov & IOL	353	47	340	0.14
15822	15822	ad	Bilat blepharoplasty, upper eyelids	256	15	256	0.06
67107	66761	af	Irid by las srg w rpr ret reatt, sclr bk	490	47	227	0.21
68700	67935	ai	Suture wound, eyelid w plast rpr canlcli	275	45	224	0.20
65730	66170	e	Corneal trnsplnt w trabeculectomy	353	107	573	0.19
65755	66985	i	Corneal trnsplnt w secondary IOL	429	46	350	0.13

[a] Pre/post work on the common scale.
[b] Added pre/post work is the pre/post work of the multiple vignette minus the pre/post work of the primary service (unless indicated).
[c] Pre/post work of the secondary service is the work of the secondary service performed alone.
[d] Ratio = Added pre/post work of secondary service divided by pre/post work of secondary service performed alone.
[e] Computed as the average of each additional service.

Appendix E Table E.9 (continued)

Comparison of pre-/post-service work[a] of primary and secondary codes:
Orthopedic surgery

Primary CPT	Secondary CPT	Svc	Description	Pre/Post work primary	Added[b] pre/post work secndry	Pre/Post[c] work secndry alone	Ratio[d]
25605	25605	k	ORIF bilat Colles'fracture	355	115	355	0.33
64721	64721	m	Bilat carpal tunnel rpr	225	73	225	0.32
64721	26055	o	Carpal tunnel rpr w tndn shth incis fngr	225	52	165	0.31
27506	27506	q	ORIF R & L femoral shaft fractures	723	252	723	0.35
28292	28292	b	Bilat bunionectomy, K/M/M	338	71	338	0.21
27506	27814	t	ORIF femoral shaft fx & bimall ankle fx	723	120	474	0.25
svc_q	24515	u	ORIF R & L fem shaft fxs & humer shaft fx	976	92	422	0.22
25260	25260	z	Rpr 5 lacr flxr tendns wrist	340	18[e]	340	0.05
svc_z	64856	ab	Rpr 5 lacr flx tendns wrst w rpr medn nrv	413	182	462	0.39
64831	26350	ae	Rpr lacr flxr tendn finger w rpr digt nrv	378	75	262	0.29
svcae	26735	ag	Rpr flx tndn fngr w rpr dig nrv w ORIF fx	453	66	235	0.28
28292	28285	d	Bunionectomy, K/M/M w hammertoe, one toe	338	40	240	0.17
29888	29881	g	Arthr meniscectomy w ACL reconstruction	454	39	273	0.14
27447	27447	i	Bilat tot knee replacement	815	111	815	0.14

[a] Pre/post work on the common scale.
[b] Added pre/post work is the pre/post work of the multiple vignette minus the pre/post work of the primary service (unless indicated).
[c] Pre/post work of the secondary service is the work of the secondary service performed alone.
[d] Ratio = Added pre/post work of secondary service divided by pre/post work of secondary service performed alone.
[e] Computed as the average of each additional service.

Appendix E Table E.9 (continued)

Comparison of pre-/post-service work[a] of primary and secondary codes:
Otolaryngology

Primary CPT	Secondary CPT	Svc	Description	Pre/Post work primary	Added[b] pre/post work secndry	Pre/Post[c] work secndry alone	Ratio[d]
31600	31525	j	Plan trach w diag larngscpy	490	59	58	1.02
svc_j	31622	l	Plan trach w diag larngscpy w diag bronch	550	6	85	0.08
31622	31525	m	Diag larngscpy w diag bronch	85	42	58	0.72
31360	38724	p	Tot laryngctmy w modif radic neck dissect	710	82	584	0.14
svc_j	31395	r	Plan trach w diag laryng w pharnglrngctmy	550	628	1056	0.59
svc_r	15755	t	Pln trch w diag laryng w pharngl w flap	1179	183	920	0.20
31200	31020	w	Anter ethmoidectomy w nas antral windows	184	20	151	0.13
31200	30115	y	Nas polypctmy w anter ethmoidectomy	184	24	193	0.12
41155	31600	aa	Plan trach w glossectomy & rad neck diss	965	61	490	0.12
svcaa	15732	ac	Pln trch w glssctmy & rad nck w musc flap	1025	94	714	0.13
30520	30140	c	Septoplasty w submuc resect turbinate	230	20	178	0.11
42145	30520	ae	Palatphrngplsty w septoplasty	348	61	230	0.26
svcae	30140	af	Palatphrng w septplsty w resect nas turb	409	6	178	0.03
69436	69436	e	Bilat tympanostomy	88	9	88	0.10
42820	svc_e	g	T & A w bilat tympanostomy	195	17[e]	88	0.19

[a] Pre/post work on the common scale.
[b] Added pre/post work is the pre/post work of the multiple vignette minus the pre/post work of the primary service (unless indicated).
[c] Pre/post work of the secondary service is the work of the secondary service performed alone.
[d] Ratio = Added pre/post work of secondary service divided by pre/post work of secondary service performed alone.
[e] Computed as the average of each additional service.

Appendix E Table E.9 (continued)

Comparison of pre-/post-service work[a] of primary and secondary codes:
Plastic surgery

Primary CPT	Secondary CPT	Svc	Description	Pre/Post work primary	Added[b] pre/post work secndry	Pre/Post[c] work secndry alone	Ratio[d]
15820	15820	z1	Bilat blephoroplasty, low lid	264	17	264	0.06
15821	15821	z2	Bilat blephoroplasty, low lid w fat pad	292	6	292	0.02
15822	15822	z3	Bilat blephoroplasty, upp lid	258	26	258	0.10
19328	19328	z4	Bilat remov intact mammary implant	266	53	266	0.20
19330	19330	z5	Bilat remov mammary implant mat	318	63	318	0.20

[a] Pre/post work on the common scale.
[b] Added pre/post work is the pre/post work of the multiple vignette minus the pre/post work of the primary service (unless indicated).
[c] Pre/post work of the secondary service is the work of the secondary service performed alone.
[d] Ratio = Added pre/post work of secondary service divided by pre/post work of secondary service performed alone.
[e] Computed as the average of each additional service.

Appendix E Table E.9 (continued)

Comparison of pre-/post-service work[a] of primary and secondary codes:
Cardiothoracic surgery

Primary CPT	Secondary CPT	Svc	Description	Pre/Post work primary	Added[b] pre/post work secndry	Pre/Post[c] work secndry alone	Ratio[d]
39400	31622	k	Diagn bronch w mediastinoscopy	245	37	85	0.43
32100	31622	m	Diagn bronch w major thoracotomy	605	65	85	0.76
32100	39400	n	Mediastinoscopy w major thoracotomy	605	82	245	0.34
32480	31622	p	Diagn bronchoscopy w tot lobectomy	785	51	85	0.60
32480	39400	q	Mediastinoscopy w tot lobectomy	785	64	245	0.26
32440	31622	s	Diagn w tot pneumonectomy	850	78	85	0.92
33512	33212	u	CABGX3 w insert/repl pcmkr or AICD	1045	127	382	0.33
33512	35301	w	Carotid endarterectomy w CABGX3	1045	145	710	0.20
35556	35355	z	Iliofemoral endartrctmy w fem-pop bypass	612	103	537	0.19
33405	33430	c	AVR w a MVR	1225	139	1270	0.11
33405	33512	e	AVR w CABGX3	1225	106	1045	0.10
33430	33512	f	MVR w CABGX3	1270	123	1045	0.12
33512	33425	h	Mitral valve rpr w CABGX3	1045	191	885	0.22

[a] Pre/post work on the common scale.
[b] Added pre/post work is the pre/post work of the multiple vignette minus the pre/post work of the primary service (unless indicated).
[c] Pre/post work of the secondary service is the work of the secondary service performed alone.
[d] Ratio = Added pre/post work of secondary service divided by pre/post work of secondary service performed alone.
[e] Computed as the average of each additional service.

Appendix E Table E.9 (continued)

Comparison of pre-/post-service work[a] of primary and secondary codes:
Urology

Primary CPT	Secondary CPT	Svc	Description	Pre/Post work primary	Added[b] pre/post work secndry	Pre/Post[c] work secndry alone	Ratio[d]
54640	54640	j	Bilat orchiopexy	220	32	220	0.15
50590	52332	m	Lithotripsy w cystourethroscopy	270	41	110	0.37
51596	43830	p	Complete cystectomy w temp gastrostomy	1300	62	417	0.15
50080	50040	s	Nephrstlthtmy/pyelstlthtmy w nephrostomy	509	40	424	0.10
54520	54520	b	Simple bilat orchiectomy	200	27	200	0.13
51845	51040	v	Cystostomy w an abdom-vag vesic neck susp	340	36	199	0.18
54530	54660	y	Radical orchiectomy w insert test prosth	344	20	208	0.09
52000	51726	ab	Cystourethroscopy w complex cystometrogrm	115	19	52	0.36
51741	51726	af	Complex cystometrgrm w complex uroflwmtry	57	14	52	0.28
51795	51772	ag	UPP w AP	52	14	49	0.28
svcag	51726	ah	Complex cystometrogrm w UPP w AP	66	7	52	0.13
svcaf	51795	ai	Cmplx cystmtrgrm w a cmplx uroflowm w AP	71	5	52	0.09
52601	svc_b	d	TURP w simple bilat orchiectomy	455	39	227	0.17
52601	49505	g	TURP w inguinal hernia rpr, over age 5	455	48	317	0.15
52601	52317	h	TURP w simple litholapaxy	455	34	129	0.26

[a] Pre/post work on the common scale.
[b] Added pre/post work is the pre/post work of the multiple vignette minus the pre/post work of the primary service (unless indicated).
[c] Pre/post work of the secondary service is the work of the secondary service performed alone.
[d] Ratio = Added pre/post work of secondary service divided by pre/post work of secondary service performed alone.
[e] Computed as the average of each additional service.

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